

Exhaust Gas Analyser

Issued by: Sun Electric UK Service

Date of Issue: 19/09/2023 Certificate Number: B 188282



0417

Page 1 of 1



SUN ELECTRIC UK SERVICE
Unit 12, Horsley's Fields,
King's Lynn, Norfolk. PE30 5DD
Tel: 01553 692422
Fax: 01553 763456

	APPROVED SIGNATORY
Code Number	920
Name (please print)	James
Signature	

ANALYSER DETAILS

Manufacturer: W. L. Brown, Inc.

Model: 2014 XX 90

Unit Serial No: 7-411515 PEF: ()

Procedure No: 5072

LOCATION DETAILS

Customer: Amesbury City

Address: 1000 1st St. S.E. Atlanta, Ga. 30316

VTS No./Others: 194166 A/C No: 70005

Ambient Temperature (°C) 22.5

Ambient Pressure (mbar) 760

INITIAL CALIBRATION CHECK. (Valid)

Remarks: _____

Calibration Gas Certificate No.: <u>MS213</u>		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of Calibration Gas	3.085 %	1950 ppm	15.92 %	0%
2	Concentration Value x PEF		1950 ppm		
3	Initial Analyser Reading	5.87 %	989 ppm	15.95 %	0.00 %

OXYGEN READING FOR AMBIENT AIR: 20.9 %

Functional tests were performed according to the Vehicle Inspectorate specification:



(please tick)

FINAL CALIBRATION CHECK

Calibration Gas _____
Certificate No.: _____

Certificate No.: <u> </u>		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	(Un)Corrected Concentration of Calibration Gas	3.455 %	1950 ppm	13.94 %	0%
5	Concentration Value x PEF		100 ppm		
6	Final Analyser Reading	3.50 %	100 ppm	14.00 %	0.00 %

OXYGEN READING FOR AMBIENT AIR: 20.5 %

The analyser meets the operational and calibration requirements of the Vehicle Inspectorate specification ~~VPB/07/24/20/CAL~~ ~~dated~~ ~~AUG. 1997. REVISED AUG. 1995~~ ~~VPB/07/24/20/CAL~~ ~~dated~~ ~~MAY 1995. REVISED AUG. 1995~~

Signed:

Recalibration Due Date:

Uncertainty of Measurement is 2.5%. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to the units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with prior written approval of the issuing laboratory.

BSI Testing has been selected to undertake full independent audits of the Sun Electric system for calibrating vehicle Exhaust Emission Equipment.

SDD 189 REV. F

CERTIFICATE OF CALIBRATION

Exhaust Gas Analyser

Issued by: Sun Diagnostics U.K.

Date of Issue: 2 December 2003 Certificate Number: B 196280



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SUN DIAGNOSTICS U.K.
Unit 12, Horsley's Fields,
King's Lynn, Norfolk. PE30 5DD
Tel: 01553 692422
Fax: 01553 763456

APPROVED SIGNATORY	
Code Number	<u>8030</u>
Name (please print)	<u>R. BARRETT</u>
Signature	<u>[Signature]</u>

ANALYSER DETAILS

Manufacturer: Sun Electric
Model: DGA1800-96
Unit Serial No: 3641595 PEF: 0.515
Procedure No: STP-III

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS
Address: 65, BATH ROAD
KINGSBURY SQUARE
MELKSHAM, WILTSHIRE
VTS No./Others 6941BB A/C No: 80005

Ambient Temperature (°C) 8

Ambient Pressure (mbar) 1009

INITIAL CALIBRATION CHECK. (Valid)

Remarks:

Calibration Gas
Certificate No.: M14318

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of Calibration Gas	<u>3.500</u> %	<u>1965</u> ppm	<u>13.99</u> %	<u>0</u> %
2	Concentration Value x PEF		<u>1012</u> ppm		
3	Initial Analyser Reading	<u>3.27</u> %	<u>1049</u> ppm	<u>13.30</u> %	<u>0.05</u> %

OXYGEN READING FOR AMBIENT AIR: 21.09 %

Functional tests were performed according to the Vehicle Inspectorate specification:

☒ (please tick)

FINAL CALIBRATION CHECK

Calibration Gas
Certificate No.: M14318

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	(Un)Corrected Concentration of Calibration Gas	<u>3.500</u> %	<u>1965</u> ppm	<u>13.99</u> %	<u>0</u> %
5	Concentration Value x PEF		<u>1012</u> ppm		
6	Final Analyser Reading	<u>3.46</u> %	<u>1000</u> ppm	<u>13.83</u> %	<u>0.08</u> %

OXYGEN READING FOR AMBIENT AIR: 20.76 %

The analyser meets the operational and calibration requirements of the Vehicle Inspectorate specification

VPB/07/24/20/CAL dated 10 June 2004 AUG. 1995. REVISED AUG. 1995
MAY 1995. REVISED AUG. 1995

Signed:

Recalibration Due Date:

10 June 2004

Uncertainty of Measurement is 2.5%. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to the units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with prior written approval of the issuing laboratory.

BSI Testing has been selected to undertake full independent audits of the Sun Diagnostics U.K. system for calibrating vehicle Exhaust Emission Equipment.

SDD 189 REV. G

CERTIFICATE OF CALIBRATION

Diesel Smoke Meter

Issued by: Snap-on Diagnostics

Date of Issue: 15th March 2012 Certificate Number : C 725452



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Snap-on Diagnostics

Denney Road, Hardwick Ind. Estate
King's Lynn, Norfolk. PE30 4HG
Tel: 01553 692422
Fax: 01553 763456

APPROVED SIGNATORY	
Code Number	8030
Name (please print)	R.BARRETT
Signature	

ANALYSER DETAILS

Manufacturer: Snap-on Diagnostics

Model: Sun DSS 10 / W

Unit Serial No: 24L0695

Procedure No: STP 118

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS

Address: KINGSBURY SQUARE
KING STREET
MELKSHAM
WILTSHIRE SN12 6HL

VTS No./Others 6941BB

A/C No: 80005

CALIBRATION RESULTS

Ambient Temperature 10.00 °C

Initial Reading

	Displayed K (1/m)	Measured Voltage (v)	Calculated K (1/m)
1	0.01	4.282	0.00
2	3.30	1.045	3.28
3	1.65	2.125	1.63
4	0.68	3.210	0.67

Final Reading

	Displayed K (1/m)	Measured Voltage (v)	Calculated K (1/m)
1	0.00	4.288	0.00
2	3.30	1.042	3.29
3	1.65	2.117	1.64
4	0.69	3.192	0.69

Oil Temperature simulator

Probe Simulator Ref. Value °C	82.00	Probe Simulator displayed Value °C	82.00
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The DSM meets the operational and calibration requirements of Specification Number **MOT/08/19/1** Dated **May 2003**

Signed:

Recalibration Due Date: 15th March 2013

The uncertainty of measurement is $\pm 0.1 \text{ m}^{-1}$ & $\pm 2^\circ\text{C}$

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$ a level of confidence of approximately 95%

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to a recognised national standards, and to the units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories.

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SOD 557 Rev A

CERTIFICATE OF CALIBRATION

Exhaust Gas Analyser

Issued by: Snap-on Diagnostics

Date of Issue: 15th March 2012 Certificate Number : C 725451



Page 1 of 1

Snap-on Diagnostics

Denney Road, Hardwick Ind. Estate
King's Lynn, Norfolk. PE30 4HG
Tel: 01553 692422
Fax: 01553 763456

APPROVED SIGNATORY	
Code Number	8030
Name (please print)	R.BARRETT
Signature	

ANALYSER DETAILS

Manufacturer: Snap-on Diagnostics

Model: DGA 2500 MOT

Unit Serial No: A000044350 PEF: 0.530

Procedure No: STP 115

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS

Address: KINGSBURY SQUARE
KING STREET
MELKSHAM
WILTSHIRE SN12 6HL

VTS No./Others 6941BB A/C No: 80005

Ambient Temperature (°C) 10

Ambient Pressure (mbar) 1015

INITIAL CALIBRATION CHECK. (Valid)

Remarks:

Calibration Gas
Certificate No.: M20319

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of Calibration Gas	3.47 %	1960 ppm	14.02 %	0%
2	Concentration Value x PEF		1039 ppm		
3	Initial Analyser Reading	3.46 %	1020 ppm	13.89 %	0.08 %

OXYGEN READING FOR AMBIENT AIR: 20.90 %

Functional tests were performed according to the Vehicle Inspectorate specification:



(please tick)

FINAL CALIBRATION CHECK

Calibration Gas
Certificate No.: M20319

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of Calibration Gas	3.47 %	1960 ppm	14.02 %	0%
5	Concentration Value x PEF		1039 ppm		
6	Final Analyser Reading	3.47 %	1055 ppm	14.06 %	0.09 %

OXYGEN READING FOR AMBIENT AIR: 20.96 %

The analyser meets the operational and calibration requirements of the Vehicle Inspectorate specification VPB/07/24/20 dated MAY 1995. REVISED AUG. 1995

Signed.

Recalibration Due Date: 15th September 2012

Uncertainty of Measurement is 2.5%. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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SOD 546 REV.B

CERTIFICATE OF CALIBRATION

Diesel Smoke Meter

Issued by: Snap-on Diagnostics

Date of Issue: 5th August 2013

Certificate Number : C 789040



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Snap-on Diagnostics

Denney Road, Hardwick Ind. Estate
King's Lynn, Norfolk. PE30 4HG
Tel: 01553 692422
Fax: 01553 763456

	APPROVED SIGNATORY
Code Number	8030
Name (please print)	R BARRETT
Signature	

ANALYSER DETAILS

Manufacturer: Snap-on

Model: Sun DSS 10 / W

Unit Serial No: 24L0695

Procedure No: STP 118

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS

Address: KINGSBURY SQUARE
KING STREET
MELKSHAM
WILTSHIRE SN12 6HL

VTS No./Others 6941BB

A/C No: 80005

CALIBRATION RESULTS

Ambient Temperature 19 °C

Initial Reading

	Displayed K (1/m)	Measured Voltage (v)	Calculated K (1/m)
1	0.00	4.230	0.00
2	3.29	1.032	3.28
3	1.63	2.098	1.63
4	0.67	3.170	0.67

Final Reading

	Displayed K (1/m)	Measured Voltage (v)	Calculated K (1/m)
1	0.00	4.240	0.00
2	3.29	1.033	3.28
3	1.63	2.106	1.63
4	0.67	3.171	0.68

Oil Temperature simulator

Probe Simulator Ref. Value °C	82.00	Probe Simulator displayed Value °C	82.00
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The DSM meets the operational and calibration requirements of Specification Number MOT/08/19/1 Dated May 2003

Signed:

Recalibration Due Date: 5th August 2014

The uncertainty of measurement is $\pm 0.1 \text{ m}^{-1}$ & $\pm 2^\circ\text{C}$

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$ a level of confidence of approximately 95%

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SOD 557 Rev A

CERTIFICATE OF CALIBRATION

Exhaust Gas Analyser

Issued by: Snap-on Diagnostics

Date of Issue: 5th August 2013

Certificate Number: C 787969



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Snap-on Diagnostics

Denney Road, Hardwick Ind. Estate
King's Lynn, Norfolk. PE30 4HG
Tel: 01553 692422
Fax: 01553 763456

APPROVED SIGNATORY	
Code Number	8030
Name (please print)	R BARRETT
Signature	

ANALYSER DETAILS

Manufacturer: Snap-on

Model: DGA 2500 MOT

Unit Serial No: A000044350 PEF: 0.530

Procedure No: STP 115

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS

Address: KINGSBURY SQUARE
KING STREET
MELKSHAM
WILTSHIRE

SN12 6HL

VTS No./Others 6941BB

A/C No: 80005

Ambient Temperature (°C) 19

Ambient Pressure (mbar) 1006

INITIAL CALIBRATION CHECK. (Valid)

Remarks:

Calibration Gas
Certificate No.: M21027

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of Calibration Gas	3.42 %	1950 ppm	14.21 %	0%
2	Concentration Value x PEF		1034 ppm		
3	Initial Analyser Reading	3.41 %	1039 ppm	14.39 %	0.07 %

OXYGEN READING FOR AMBIENT AIR: 20.92 %

Functional tests were performed according to the Vehicle Inspectorate specification:



(please tick)

FINAL CALIBRATION CHECK

Calibration Gas
Certificate No.: M21027

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of Calibration Gas	3.42 %	1950 ppm	14.21 %	0%
5	Concentration Value x PEF		1034 ppm		
6	Final Analyser Reading	3.40 %	1043 ppm	14.02 %	0.08 %

OXYGEN READING FOR AMBIENT AIR: 20.97 %

The analyser meets the operational and calibration requirements of the Vehicle Inspectorate specification VPB/0724/20 dated MAY 1995. REVISED AUG. 1995

Signed.

Recalibration Due Date: 5th February 2014

Uncertainty of Measurement is 2.5%. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to the units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with prior written approval of the issuing laboratory.

SOD 546 REV.B

CERTIFICATE OF CALIBRATION

Issued By **BOWMONK LTD** Accreditation Laboratory

DATE OF ISSUE **9-Mar-12**

SERIAL NUMBER

73633



0327

BOWMONK LIMITED
DIAMOND ROAD
NORWICH
NORFOLK
NR6 6AW

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1 1

Calibrated By

E Hill
L J McCarthy✓
G O Webb
H S Wilkinson

Approved Signatory

E Hill
L J McCarthy
G O Webb
H S Wilkinson✓

Portable Brake Meter Details - Results as found

Meter serial number 142382

Manufacturer TAPLEY

Date of calibration 9-Mar-12

Calibrated for VICTORIA MOTORS, THE BEAR GARAGE, BATH ROAD, ATWORTH,
MELKSHAM SN12 8HN

Brake Efficiency %g	0	16	30	40	60	70	90
1 st Test Reading	0	16	30	40	60	70	90
2 nd Test Reading	0	16	30	40	60	70	90

Certified By: -

This reading is taken from the side of the recording needle, which touches the main needle on meters of Bowmonk Manufacture.

This meter has been calibrated to a procedure as agreed with UKAS, using a purpose built dedicated inclinable test rig.

Uncertainty of measurement: +/- 1.0 %g

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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CERTIFICATE OF CALIBRATION

Exhaust Gas Analyser

Issued by: Snap-on Diagnostics

Date of Issue: 29th January 2014 Certificate Number: C 807118



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Snap-on Diagnostics

Denney Road, Hardwick Ind. Estate
King's Lynn, Norfolk. PE30 4HG
Tel: 01553 692422
Fax: 01553 763466

APPROVED SIGNATORY	
Code Number	8030
Name (please print)	R.BARRETT
Signature	

ANALYSER DETAILS

Manufacturer: Snap-on

Model: DGA 2500 MOT

Unit Serial No: A000044350 PEF: 0.530

Procedure No: STP 115

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS

Address: KINGSBURY SQUARE
KING STREET
MELKSHAM
WILTSHIRE

SN12 6HL

VTs No./Others 6941BB

A/C No: 80005

Ambient Temperature (°C) 7

Ambient Pressure (mbar) 977

INITIAL CALIBRATION CHECK. (Valid)

Remarks:

Calibration Gas
Certificate No.: M21294

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of Calibration Gas	3.50 %	1955 ppm	14.05 %	0%
2	Concentration Value x PEF		1036 ppm		
3	Initial Analyser Reading	3.51 %	1008 ppm	14.04 %	0.08 %

OXYGEN READING FOR AMBIENT AIR: 20.88 %

Functional tests were performed according to the Vehicle Inspectorate specification:



(please tick)

FINAL CALIBRATION CHECK

Calibration Gas
Certificate No.: M21294

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of Calibration Gas	3.50 %	1955 ppm	14.05 %	0%
5	Concentration Value x PEF		1036 ppm		
6	Final Analyser Reading	3.46 %	1055 ppm	13.96 %	0.08 %

OXYGEN READING FOR AMBIENT AIR: 20.80 %

The analyser meets the operational and calibration requirements of the Vehicle Inspectorate specification VPB07/24/201 dated MAY 1995. REVISED AUG. 1995

Signed:

Recalibration Due Date: 5th August 2014

Uncertainty of Measurement is 2.5%. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k = 2, providing a coverage probability of approximately 95 %. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

Diesel Smoke Meter

Issued by: Snap-on Diagnostics

Date of Issue: 31st July 2014

Certificate Number : C 829821



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Snap-on Diagnostics

Denney Road, Hardwick Ind. Estate
King's Lynn, Norfolk. PE30 4HG
Tel: 01553 692422
Fax: 01553 763456

	APPROVED SIGNATORY
Code Number	8030
Name (please print)	R BARRETT
Signature	

ANALYSER DETAILS

Manufacturer: Snap-on

Model: Sun DSS 10 / W

Unit Serial No: 24L0695

Procedure No: STP 118

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS

Address: KINGSBURY SQUARE
KING STREET
MELKSHAM
WILTSHIRE SN12 6HL

VTS No./Others 6941BB

A/C No: 80005

CALIBRATION RESULTS

Ambient Temperature 22 °C

Initial Reading

	Displayed K (1/m)	Measured Voltage (v)	Calculated K (1/m)
1	0.01	4.245	0.00
2	3.29	1.033	3.29
3	1.64	2.098	1.64
4	0.69	3.168	0.68

Final Reading

	Displayed K (1/m)	Measured Voltage (v)	Calculated K (1/m)
1	0.01	4.233	0.00
2	3.29	1.031	3.28
3	1.63	2.104	1.63
4	0.66	3.186	0.66

Oil Temperature simulator

Probe Simulator Ref. Value °C	82	Probe Simulator displayed Value °C	82
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The DSM meets the operational and calibration requirements of Specification Number MOT/08/19/1 Dated May 2003

Signed:

Recalibration Due Date: 5th August 2015

The uncertainty of measurement is $\pm 0.1\text{m}^{-1}$ & $\pm 2^\circ\text{C}$. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a coverage probability of approximately 95 %. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory

CERTIFICATE OF CALIBRATION

Exhaust Gas Analyser

Issued by: Snap-on Diagnostics

Date of Issue: 31st July 2014

Certificate Number : C 829820



0417

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Snap-on Diagnostics

Denney Road, Hardwick Ind. Estate
King's Lynn, Norfolk. PE30 4HG
Tel: 01553 692422
Fax: 01553 763456

APPROVED SIGNATORY	
Code Number	8030
Name (please print)	R BARRETT
Signature	

ANALYSER DETAILS

Manufacturer: Snap-on

Model: DGA 2500 MOT

Unit Serial No: A000044350 PEF: 0.530

Procedure No: STP 115

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS

Address: KINGSBURY SQUARE
KING STREET
MELKSHAM
WILTSHIRE SN12 6HL

VTS No./Others 6941BB A/C No: 80005

Ambient Temperature (°C) 22

Ambient Pressure (mbar) 990

INITIAL CALIBRATION CHECK. (Valid)

Remarks:

Calibration Gas M21320
Certificate No.:

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of Calibration Gas	3.49 %	1960 ppm	14.05 %	0%
2	Concentration Value x PEF		1039 ppm		
3	Initial Analyser Reading	3.45 %	1048 ppm	14.03 %	0.02 %

OXYGEN READING FOR AMBIENT AIR: 20.88 %

Functional tests were performed according to the Vehicle Inspectorate specification:



(please tick)

FINAL CALIBRATION CHECK

Calibration Gas M21320
Certificate No.:

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of Calibration Gas	3.49 %	1960 ppm	14.05 %	0%
5	Concentration Value x PEF		1039 ppm		
6	Final Analyser Reading	3.50 %	1036 ppm	14.05 %	0.04 %

OXYGEN READING FOR AMBIENT AIR: 20.99 %

The analyser meets the operational and calibration requirements of the Vehicle Inspectorate specification VPB/07/24/20/ dated MAY 1995. REVISED AUG. 1995

Signed:

Recalibration Due Date: 5th February 2015

Uncertainty of Measurement is 2.5%. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k = 2, providing a coverage probability of approximately 95 %. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

Exhaust Gas Analyser

Issued by: Snap-on Diagnostics

Date of Issue: 2nd February 2015 Certificate Number: C 854930



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Snap-on Diagnostics

Denney Road, Hardwick Ind. Estate
King's Lynn, Norfolk. PE30 4HG
Tel: 01553 692422
Fax: 01553 763456

APPROVED SIGNATORY	
Code Number	8030
Name (please print)	R BARRETT
Signature	

ANALYSER DETAILS

Manufacturer: Snap-on

Model: DGA 2500 MOT

Unit Serial No: A000044350 PEF: 0.530

Procedure No: STP 115

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS

Address: KINGSBURY SQUARE
KING STREET
MELKSHAM
WILTSHIRE

SN12 6HL

VTS No./Others 6941BB

A/C No: 80005

Ambient Temperature (°C) 5

Ambient Pressure (mbar) 981

INITIAL CALIBRATION CHECK. (Valid)

Remarks:

Calibration Gas M21757
Certificate No.:

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of Calibration Gas	3.47 %	1975 ppm	14.08 %	0%
2	Concentration Value x PEF		1047 ppm		
3	Initial Analyser Reading	3.53 %	1019 ppm	13.95 %	0.01 %

OXYGEN READING FOR AMBIENT AIR: 20.88 %

Functional tests were performed according to the Vehicle Inspectorate specification:



(please tick)

FINAL CALIBRATION CHECK

Calibration Gas M21757
Certificate No.:

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of Calibration Gas	3.47 %	1975 ppm	14.08 %	0%
5	Concentration Value x PEF		1047 ppm		
6	Final Analyser Reading	3.43 %	1047 ppm	13.98 %	0.06 %

OXYGEN READING FOR AMBIENT AIR: 20.75 %

The analyser meets the operational and calibration requirements of the Vehicle Inspectorate specification VPB/07/24/20 dated MAY 1995. REVISED AUG. 1995

Signed:

Recalibration Due Date: 5th August 2015

Uncertainty of Measurement is 2.5%. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k = 2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

Diesel Smoke Meter

Issued by: Snap-on Diagnostics

Date of Issue: 4 August 2015

Certificate Number : C 3FK005400



0417

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Snap-on Diagnostics

Denney Road, Hardwick Ind. Estate
King's Lynn, Norfolk. PE30 4HG
Tel: 01553 692422
Fax: 01553 763456

APPROVED SIGNATORY	
Code Number	L782DG
Name (please print)	ROB BARRETT
Signature	

ANALYSER DETAILS

Manufacturer: Snap-on

Model: DSS 10 SMOKE HEAD

Unit Serial No: 24L0695

Procedure No: STP118

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS

Address: SANMAX MOTOR ENGINEERS
KINGSBURY SQUARE
MELKSHAM

SN12 6HL

VTS No./Others 6941BB

A/C No: 201161930

CALIBRATION RESULTS

Ambient Temperature

16 °C

Initial Reading

	Displayed K (1/m)	Measured Voltage (v)	Calculated K (1/m)
1	0.00	4.144	0.00
2	3.29	1.012	328.00
3	1.64	2.055	1.63
4	0.67	3.105	0.67

Final Reading

	Displayed K (1/m)	Measured Voltage (v)	Calculated K (1/m)
1	0.00	4.310	0.00
2	3.28	1.055	3.27
3	1.64	2.137	1.63
4	0.68	3.220	0.68

Oil Temperature simulator

Probe Simulator Ref. Value °C	82	Probe Simulator displayed Value °C	82
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The DSM meets the operational and calibration requirements of Specification Number **MOT/08/19/1** Dated **May 2003**

Signed:

Recalibration Due Date: **5 August 2016**

The uncertainty of measurement is $\pm 0.1 \text{ m}^{-1}$ & $\pm 2^\circ\text{C}$. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a coverage probability of approximately 95 %. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory

CERTIFICATE OF CALIBRATION

Exhaust Gas Analyser

Issued by: Snap-on Diagnostics

Date of Issue: 4 August 2015

Certificate Number : C 3FK005399



0417

Page 1 of 1

Snap-on Diagnostics

Denney Road, Hardwick Ind. Estate
King's Lynn, Norfolk. PE30 4HG
Tel: 01553 692422
Fax: 01553 763456

APPROVED SIGNATORY	
Code Number	L782DG
Name (please print)	ROB BARRETT
Signature	

ANALYSER DETAILS

Manufacturer: Snap-on

Model: DGA 2500 MOT

Unit Serial No: A000044350 PEF: 0.530

Procedure No: STP115

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS

Address: SANMAX MOTOR ENGINEERS
KINGSBURY SQUARE
MELKSHAM

SN12 6HL

VTS No./Others 6941BB

A/C No: 201161930

Ambient Temperature (°C) 16

Ambient Pressure (mbar) 1010

INITIAL CALIBRATION CHECK. (Valid)

Calibration Gas
Certificate No.: M21969

Remarks:

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of Calibration Gas	3.50 %	2005 ppm	13.95 %	0%
2	Concentration Value x PEF		1063 ppm		
3	Initial Analyser Reading	3.445 %	1055 ppm	14.11 %	0.05 %

OXYGEN READING FOR AMBIENT AIR: 20.76 %

Functional tests were performed according to the Vehicle Inspectorate specification:



(please tick)

FINAL CALIBRATION CHECK

Calibration Gas
Certificate No.: M21969

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of Calibration Gas	3.50 %	2005 ppm	13.95 %	0%
5	Concentration Value x PEF		1063 ppm		
6	Final Analyser Reading	3.498 %	1053 ppm	13.89 %	0.06 %

OXYGEN READING FOR AMBIENT AIR: 20.80 %

The analyser meets the operational and calibration requirements of the Vehicle Inspectorate specification VPB/07/24/20/ dated MAY 1995. REVISED AUG. 1995

Signed:

Recalibration Due Date: 5 February 2016

Uncertainty of Measurement is 2.5%. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k = 2, providing a coverage probability of approximately 95 %. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

Exhaust Gas Analyser

Issued by: Snap-on Diagnostics

Date of Issue: 4 February 2016

Certificate Number : C 3FK024383



0417

Page 1 of 1

Snap-on Diagnostics

Denney Road, Hardwick Ind. Estate
King's Lynn, Norfolk. PE30 4HG
Tel: 01553 692422
Fax: 01553 763456

APPROVED SIGNATORY	
Code Number	L782DG
Name (please print)	ROB BARRETT
Signature	

ANALYSER DETAILS

Manufacturer: Snap-on

Model: DGA 2500 MOT

Unit Serial No: A000044350 PEF: 0.530

Procedure No: STP115

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS

Address: KINGSBURY SQUARE
KING STREET

MELKSHAM

SN12 6HL

VTS No./Others 6941BB

A/C No: 201161930

Ambient Temperature (°C) 15

Ambient Pressure (mbar) 996

INITIAL CALIBRATION CHECK. (Valid)

Calibration Gas
Certificate No.: M22193

Remarks:

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of Calibration Gas	3.495 %	1975 ppm	13.87 %	0%
2	Concentration Value x PEF		1047 ppm		
3	Initial Analyser Reading	3.50 %	1044 ppm	13.71 %	0.08 %

OXYGEN READING FOR AMBIENT AIR: 20.78 %

Functional tests were performed according to the Vehicle Inspectorate specification:



(please tick)

FINAL CALIBRATION CHECK

Calibration Gas
Certificate No.: M22193

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of Calibration Gas	3.495 %	1975 ppm	13.87 %	0%
5	Concentration Value x PEF		1047 ppm		
6	Final Analyser Reading	3.449 %	1039 ppm	13.76 %	0.08 %

OXYGEN READING FOR AMBIENT AIR: 21.15 %

The analyser meets the operational and calibration requirements of the Vehicle Inspectorate specification VPB/07/24/20 dated MAY 1995. REVISED AUG. 1995

Signed:

Recalibration Due Date: 5 August 2016

Uncertainty of Measurement is 2.5%. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k = 2, providing a coverage probability of approximately 95 %. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

Diesel Smoke Meter

Issued by: Snap-on Diagnostics

Date of Issue: 26 July 2016

Certificate Number: C 3FK048242



0417

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Snap-on Diagnostics

Denney Road, Hardwick Ind. Estate
King's Lynn, Norfolk. PE30 4HG
Tel: 01553 692422
Fax: 01553 763456

APPROVED SIGNATORY	
Code Number	L782DG
Name (please print)	ROB BARRETT
Signature	

ANALYSER DETAILS

Manufacturer: Snap-on

Model: DSS 10 SMOKE HEAD

Unit Serial No: 24L0695

Procedure No: STP118

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS

Address: KINGSBURY SQUARE
KING STREET

MELKSHAM

SN12 6HL

VTs No./Others 6941BB

A/C No: 201161930

CALIBRATION RESULTS

Ambient Temperature

20 °C

Initial Reading

	Displayed K (1/m)	Measured Voltage (v)	Calculated K (1/m)
1	0.00	4.270	0.00
2	3.25	1.056	3.25
3	1.62	2.125	1.62
4	0.67	3.206	0.67

Final Reading

	Displayed K (1/m)	Measured Voltage (v)	Calculated K (1/m)
1	0.00	4.280	0.00
2	3.26	1.058	3.25
3	1.62	2.130	1.62
4	0.67	3.210	0.67

Oil Temperature simulator

Probe Simulator Ref. Value °C	82	Probe Simulator displayed Value °C	82
-------------------------------	----	------------------------------------	----

The DSM meets the operational and calibration requirements of Specification Number **MOT/08/19/1** Dated **May 2003**

Signed:

Recalibration Due Date: **5 August 2017**

The uncertainty of measurement is $\pm 0.1 \text{ m}^{-1}$ & $\pm 2^\circ\text{C}$. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k = 2$, providing a coverage probability of approximately 95 %. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory

CERTIFICATE OF CALIBRATION

Exhaust Gas Analyser

Issued by: Snap-on Diagnostics

Date of Issue: 26 July 2016

Certificate Number : C 3FK048037



0417

Page 1 of 1

Snap-on Diagnostics

Denney Road, Hardwick Ind. Estate
King's Lynn, Norfolk. PE30 4HG
Tel: 01553 692422
Fax: 01553 763456

APPROVED SIGNATORY	
Code Number	L782DG
Name (please print)	ROB BARRETT
Signature	

ANALYSER DETAILS

Manufacturer: Snap-on

Model: DGA 2500 MOT

Unit Serial No: A000044350 PEF: 0.530

Procedure No: STP115

LOCATION DETAILS

Customer: SANMAX MOTOR ENGINEERS

Address: KINGSBURY SQUARE
KING STREET

MELKSHAM

SN12 6HL

VTs No./Others 6941BB

A/C No: 201161930

Ambient Temperature (°C) 20

Ambient Pressure (mbar) 1016

INITIAL CALIBRATION CHECK. (Valid)

Calibration Gas M22435
Certificate No.: M22435

Remarks:

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of Calibration Gas	3.445 %	1980 ppm	13.84 %	0%
2	Concentration Value x PEF		1049 ppm		
3	Initial Analyser Reading	3.419 %	1037 ppm	13.95 %	0.05 %

OXYGEN READING FOR AMBIENT AIR: 20.88 %

Functional tests were performed according to the Vehicle Inspectorate specification:



(please tick)

FINAL CALIBRATION CHECK

Calibration Gas M22435
Certificate No.: M22435

		Carbon Monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of Calibration Gas	3.445 %	1980 ppm	13.84 %	0%
5	Concentration Value x PEF		1049 ppm		
6	Final Analyser Reading	3.394 %	1039 ppm	13.77 %	0.09 %

OXYGEN READING FOR AMBIENT AIR: 20.80 %

The analyser meets the operational and calibration requirements of the Vehicle Inspectorate specification VPB/07/24/20/ dated MAY 1995. REVISED AUG. 1995

Signed:

Recalibration Due Date: 5 February 2017

Uncertainty of Measurement is 2.5%. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k = 2, providing a coverage probability of approximately 95 %. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

DATE OF ISSUE

13 March 2017

CERTIFICATE NUMBER

777107



0060



CSA
Group

PAGE 1 OF 1 PAGE

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION &
SERVICING CONTACT:

AP-TECH

APPROVED SIGNATORY

Number

761

Name
(please print)

C A ADAMS

Signature

DIESEL SMOKE METER

SMOKE METER DETAILS

Manufacturer: BOSCH

Model: RTM 430 Issue no. 7

Serial No: 232927138

LOCATION DETAILS

Contact: KEITH EDWARDS

Address: KINGSBURY MOT CENTRE
KINGSBURY SQUARE, MELKSHAM

VTs No: 6941 B3

INITIAL CALIBRATION

		True filter value, m ¹	Smoke meter reading, m ¹	Reference filter Serial No	UKAS Calibration Certificate No	
1	Garage filter		1.81			
2	Reference filter 1	0.87	0.91	A1	0060	758237
3	Reference filter 2	1.91	1.96	A2	0060	758238
4	Reference filter 3	3.40	3.46	A3	0060	758239

Unless otherwise stated, the reference filters were calibrated at UKAS Laboratory 0060

FINAL CALIBRATION

		True filter value, m ¹	Smoke meter reading, m ¹
5	Garage filter		1.79
6	Reference filter 1	0.87	0.89
7	Reference filter 2	1.91	1.94
8	Reference filter 3	3.40	3.43

Oil temperature probe calibration results for 2002 specification machines (in the range 50-90°C)	
Probe/DSM indication	70 °C
Reference thermometer indication	70 °C

FINAL AMBIENT TEMPERATURE:

11 °C

The smoke meter meets the calibration requirements of the current Vehicle and Operator Services Agency specification *VI/MOT/08/19/1.

The uncertainty of measurement is $\pm(0.12\text{m}^1 + 1 \text{ least significant digit})$

Signed: _____

RECALIBRATION
DUE BEFORE:

13 MARCH 2018

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

DATE OF ISSUE

13 MARCH 2017

CERTIFICATE NUMBER 774904



0060



CSA
Group

PAGE 1 OF 1 PAGE

APPROVED SIGNATORY

Number	761
Name (please print)	C. A. AMINSON
Signature	

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION &
SERVICING CONTACT:

AP-TECH

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: BOSCH

Model: BEA 850 Issue no. 8

Serial No: 230052938

Init PEF: 0.528 Final PEF: 0.528

LOCATION DETAILS

Contact: KEITH EDWARDS

Address: KINGSBURY MOT CENTRE

KINGSBURY SQUARE, MELSHAM

VTS No: 694133

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0408 / 22633

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	3.535 %	1470 ppm	13.85 %	0.00 %
2	Concentration value x PEF		1060 ppm		
3	Initial analyser reading	3.448 %	1035 ppm	13.65 %	0.07 %

INITIAL O₂ READING FOR AMBIENT AIR 20.84 %

MANOMETER INDICATION 1011 mbar

FINAL AMBIENT TEMPERATURE 11 °C

CORRECTION APPLIED +5 mbar

PRESSURE INDICATED BY ANALYSER 1015 mbar

AMBIENT PRESSURE (after corr) 1016 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	3.535 %	1470 ppm	13.85 %	0.00 %
5	Concentration value x PEF		1060 ppm		
6	Final analyser reading	3.529 %	1050 ppm	13.81 %	0.00 %
7	Final O ₂ reading for ambient air				20.84 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL. The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed: _____

RECALIBRATION
DUE BEFORE:

13 MARCH 2017

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

DATE OF ISSUE 05 SEPTEMBER 2017 CERTIFICATE NUMBER 782678



0060



**CSA
Group**

PAGE 1 OF 1 PAGE

APPROVED SIGNATORY

Number	<u>916</u>
Name (please print)	<u>J. LITTLETON</u>
Signature	

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION &
SERVICING CONTACT:

ANDREW PACE

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: BOSCH
Model: BEA 850 Issue no. 9
Serial No: 230052938
Init PEF: 0.512 Final PEF: 0.511

LOCATION DETAILS

Contact: S. CARLTON
Address: KINGSBURY MOT CENTRE
KINGSBURY SQUARE, MELKSHAM
VTS No: 694188

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0408 / 22629

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	<u>3.535%</u>	<u>1970 ppm</u>	<u>13.85 %</u>	<u>0.00 %</u>
2	Concentration value x PEF		<u>1009 ppm</u>		
3	Initial analyser reading	<u>3.548 %</u>	<u>986 ppm</u>	<u>13.86 %</u>	<u>0.00 %</u>

INITIAL O₂ READING FOR AMBIENT AIR 20.91 % MANOMETER INDICATION 1017 mbar

FINAL AMBIENT TEMPERATURE 17 °C CORRECTION APPLIED -5 mbar

PRESSURE INDICATED BY ANALYSER 1015 mbar AMBIENT PRESSURE (after corr) 1012 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	<u>3.535 %</u>	<u>1970 ppm</u>	<u>13.85 %</u>	<u>0.00 %</u>
5	Concentration value x PEF		<u>1007 ppm</u>		
6	Final analyser reading	<u>3.542 %</u>	<u>1001 ppm</u>	<u>13.80 %</u>	<u>0.00 %</u>
7	Final O ₂ reading for ambient air				<u>20.91 %</u>

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.
The uncertainty of measurement is $\pm(1.2\% \text{ of gas concentration} + 1 \text{ least significant digit})$

Signed: _____

RECALIBRATION
DUE BEFORE:

13 MARCH 2018

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

DATE OF ISSUE 22ND MARCH 2018 CERTIFICATE NUMBER 790072



0060



CSA
Group

PAGE 1 OF 1 PAGE

APPROVED SIGNATORY

Number	255
Name (please print)	CAE NOBLE
Signature	

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION &
SERVICING CONTACT:

GENERAL DIAGNOSTIC

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: Boxer
Model: BGA 050 Issue no. 9
Serial No: 230 052 938
Init PEF: 0.537 Final PEF: 0.537

LOCATION DETAILS

Contact: MR CARLYON
Address: KINGSLEY MOT CENTRE
29 KINGSLEY SQUARE SN12 6HL
VTS No: 69418B

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0404 / 22855

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	3.470 %	1950 ppm	13.93 %	0.00 %
2	Concentration value x PEF		1034 ppm		
3	Initial analyser reading	3.545 %	1029 ppm	14.10 %	0.07 %

INITIAL O₂ READING FOR AMBIENT AIR 21.00 % MANOMETER INDICATION 1009 mbar

FINAL AMBIENT TEMPERATURE 10 °C CORRECTION APPLIED 0 mbar

PRESSURE INDICATED BY ANALYSER 1009 mbar AMBIENT PRESSURE (after corr) 1009 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	3.470 %	1950 ppm	13.93 %	0.00 %
5	Concentration value x PEF		1034 ppm		
6	Final analyser reading	3.480 %	1040 ppm	13.99 %	0.04 %
7	Final O ₂ reading for ambient air				21.00 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.
The uncertainty of measurement is $\pm 1.2\%$ of gas concentration + 1 least significant digit

Signed: _____

RECALIBRATION
DUE BEFORE:

22ND SEPTEMBER 2018

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

DATE OF ISSUE 14th JUNE 2018 CERTIFICATE NUMBER 801755



0060



CSA
Group

PAGE 1 OF 1 PAGE

APPROVED SIGNATORY

Number	255
Name (please print)	CARL WOOD
Signature	

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION &
SERVICING CONTACT:

GENERAL DIAGNOSTIC

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: Bosch
Model: BEA 050 Issue no. 9
Serial No: 230 052 938
Init PEF: 0.530 Final PEF: 0.530

LOCATION DETAILS

Contact: MR ORLYON
Address: KINGSLEY MOT CENTRE 29
KINGSLEY SQUARE MARSHAM SN12 6HL
VTS No: 694188

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0408 / 22855

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	3.470 %	1950 ppm	13.93 %	0.00 %
2	Concentration value x PEF		1034 ppm		
3	Initial analyser reading	3.493 %	1016 ppm	13.96 %	0.03 %

INITIAL O₂ READING FOR AMBIENT AIR 21.14 %

MANOMETER INDICATION 1005 mbar

FINAL AMBIENT TEMPERATURE 18 °C

CORRECTION APPLIED 0 mbar

PRESSURE INDICATED BY ANALYSER 1007 mbar

AMBIENT PRESSURE (after corr) 1005 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	3.470 %	1950 ppm	13.93 %	0.00 %
5	Concentration value x PEF		1034 ppm		
6	Final analyser reading	3.472 %	1020 ppm	13.90 %	0.00 %
7	Final O ₂ reading for ambient air				20.97 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.
The uncertainty of measurement is ±1.2% of gas concentration + 1 least significant digit)

Signed: _____

RECALIBRATION
DUE BEFORE:

14th DECEMBER 2018

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

DATE OF ISSUE 14th December 2018 CERTIFICATE NUMBER 810380



0060



CSA
Group

PAGE 1 OF 1 PAGE

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION &
SERVICING CONTACT:

GENERAL DIAGNOSTIC

APPROVED SIGNATORY

Number	265
Name (to sign only)	CHL WOODS
Signature	

DIESEL SMOKE METER

SMOKE METER DETAILS

Manufacturer: Bosch
Model: bm 430 Issue no: 8
Serial No: 232 927 138

LOCATION DETAILS

Contact: MR CHRYN
Address: KINGSLEY MOT CENTRE 29
KINGSLEY SQUARE MERTON
VTS No: 6741B3

INITIAL CALIBRATION

		True filter value, m	Smoke meter reading, m	Reference filter Serial No	UKAS Calibration Certificate No	
1	Garage filter		1.77			
2	Reference filter 1	0.89	0.90	E3	0060	803128
3	Reference filter 2	1.91	1.93	E2	0060	803127
4	Reference filter 3	3.37	3.41	E1	0060	803126

Unless otherwise stated, the reference filters were calibrated at UKAS Laboratory 0060

FINAL CALIBRATION

		True filter value, m	Smoke meter reading, m
5	Garage filter		1.75
6	Reference filter 1	0.89	0.89
7	Reference filter 2	1.91	1.92
8	Reference filter 3	3.37	3.38

D. Temperature probe calibration results for 2002 spot fast on machines in the range 50-90°C	
Probe/DSM indication	83 °C
Reference thermometer indication	84 °C

FINAL AMBIENT TEMPERATURE:

9 °C

The smoke meter meets the calibration requirements of the current Vehicle and Operator Services Agency specification *VI/MOT/08/19/1.
The uncertainty of measurement is $\pm(0.12\text{m} + 1 \text{ least significant digit})$

Signed: _____

RECALIBRATION
DUE BEFORE:

14th December 2019

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

DATE OF ISSUE 22nd March 2019 CERTIFICATE NUMBER 781537



0060



CSA
Group

PAGE 1 OF 1 PAGE

APPROVED SIGNATORY

Number	255
Name (please print)	CARL WOOD
Signature	

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION &
SERVICING CONTACT:

GENEAL DIAGNOSTIC

DIESEL SMOKE METER

SMOKE METER DETAILS

Manufacturer: Bosch
Model: Bm 430 Issue no. 8
Serial No: 232 927 138

LOCATION DETAILS

Contact: MR CARMON
Address: KINGSLEY MOT CENTRE
29 KINGSLEY SQUARE SN12 6HL
VTS No: 6941BB

INITIAL CALIBRATION

		True filter value, m ¹	Smoke meter reading, m ¹	Reference filter Serial No	UKAS Calibration Certificate No	
1	Garage filter		1.76			
2	Reference filter 1	0.40	0.96	D3	0060	800487
3	Reference filter 2	1.88	1.92	D2	0060	800486
4	Reference filter 3	3.38	3.45	D1	0060	800485

Unless otherwise stated, the reference filters were calibrated at UKAS Laboratory 0060

FINAL CALIBRATION

		True filter value, m ¹	Smoke meter reading, m ¹
5	Garage filter		1.74
6	Reference filter 1	0.40	0.92
7	Reference filter 2	1.88	1.89
8	Reference filter 3	3.38	3.40

Oil temperature probe calibration results for 2002 specification machines (in the range 50-90°C)	
Probe/DSM indication	84 °C
Reference thermometer indication	82 °C

FINAL AMBIENT TEMPERATURE:

9 °C

The smoke meter meets the calibration requirements of the current Vehicle and Operator Services Agency specification *VI/MOT/08/19/1.
The uncertainty of measurement is $\pm(0.12m^1 + 1 \text{ least significant digit})$

Signed: _____

RECALIBRATION
DUE BEFORE:

22nd March 2019

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

DATE OF ISSUE 11th December 2018

CERTIFICATE NUMBER 808707



0060



CSA
Group

PAGE 1 OF 1 PAGE

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION &
SERVICING CONTACT:

GENBOL DIAGNOSTIC

APPROVED SIGNATORY

Number	255
Name (please print)	CARL HODGE
Signature	

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: Bosch
Model: BEA 050 Issue no. 4
Serial No: 230 052 934
Init PEF: 0.538 Final PEF: 0.538

LOCATION DETAILS

Contact: MR CARLYON
Address: KINGSLEY MOT CENTRE 2A
KINGSLEY SQUARE MERTON
VTS No: 694180

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0408 / 23477

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	3.520 %	1955 ppm	13.88 %	0.00 %
2	Concentration value x PEF		1073 ppm		
3	Initial analyser reading	3.521 %	1022 ppm	13.93 %	0.01 %

INITIAL O₂ READING FOR AMBIENT AIR 21.00 % MANOMETER INDICATION 1023 mbar

FINAL AMBIENT TEMPERATURE 9 °C CORRECTION APPLIED 0 mbar

PRESSURE INDICATED BY ANALYSER 1026 mbar AMBIENT PRESSURE (after corr) 1023 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	3.520 %	1955 ppm	13.88 %	0.00 %
5	Concentration value x PEF		1073 ppm		
6	Final analyser reading	3.484 %	1020 ppm	13.91 %	0.00 %
7	Final O ₂ reading for ambient air				20.99 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.
The uncertainty of measurement is ±1.2% of gas concentration + 1 least significant digit

Signed: _____

RECALIBRATION
DUE BEFORE:

14th June 2019

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

DATE OF ISSUE

28th MAY 2019

CERTIFICATE NUMBER 817002



0060



PAGE 1 OF 1 PAGE

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION &
SERVICING CONTACT:

GENERAL DIAGNOSTICS

APPROVED SIGNATORY

Number	9240
Name (please print)	RYAN KITCHEN
Signature	

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: BOSCH
Model: BEH CSC Issue no. 9
Serial No: 230052938
Init PEF: C 530 Final PEF: C 530

LOCATION DETAILS

Contact: MR CARLYON
Address: KINGSBURY MOT CENTRE,
KINGSBURY SQUARE, WICKSTEAD, SUI2 6HL
VTS No: 694138

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: C408 / 23608

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	3.505 %	1985 ppm	13.96 %	0.00 %
2	Concentration value x PEF		1052 ppm		
3	Initial analyser reading	3.461 %	1019 ppm	13.75 %	0.02 %

INITIAL O₂ READING FOR AMBIENT AIR 20.49 %

MANOMETER INDICATION 1005 mbar

FINAL AMBIENT TEMPERATURE 14 °C

CORRECTION APPLIED 0 mbar

PRESSURE INDICATED BY ANALYSER 1016 mbar

AMBIENT PRESSURE (after corr) 1005 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	3.505 %	1985 ppm	13.96 %	0.00 %
5	Concentration value x PEF		1052 ppm		
6	Final analyser reading	3.509 %	1044 ppm	14.05 %	0.00 %
7	Final O ₂ reading for ambient air				21.00 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.
The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed: _____

RECALIBRATION

DUE BEFORE: 11th DECEMBER 2019

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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CERTIFICATE OF CALIBRATION

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DATE OF ISSUE

19th NOVEMBER 2019

CERTIFICATE NUMBER

832554



0060



PAGE 1 OF 1 PAGE

APPROVED SIGNATORY

Number	940
Name (please print)	ANAS AZIZOGLU
Signature	

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION &
SERVICING CONTACT:

GENERAL DIAGNOSTIC

DIESEL SMOKE METER

SMOKE METER DETAILS

Manufacturer: BOSCH

Model: RTM 430 Issue no. 9

Serial No: 232 927 138

LOCATION DETAILS

Contact: MR CANLYON

Address: KINGSBURY MOT CENTRE, 24 KINGSBURY
SQUARE, MECKHAM, WILTSHIRE, SN12 6HL

VTs No: 694188

INITIAL CALIBRATION

		True filter value, m ³	Smoke meter reading, m ³	Reference filter Serial No	UKAS Calibration Certificate No	
1	Garage filter		1.76			
2	Reference filter 1	0.96	0.99	E3	0060	823830
3	Reference filter 2	1.91	1.95	E2	0060	823829
4	Reference filter 3	3.37	3.40	E1	0060	823828

Unless otherwise stated, the reference filters were calibrated at UKAS Laboratory 0060

FINAL CALIBRATION

		True filter value, m ³	Smoke meter reading, m ³
5	Garage filter		1.73
6	Reference filter 1	0.96	0.93
7	Reference filter 2	1.91	1.89
8	Reference filter 3	3.37	3.35

Oil temperature probe calibration results for 2002
specification machines (in the range 50-90°C)

Probe/DSM indication	68 °C
Reference thermometer indication	70 °C

FINAL AMBIENT TEMPERATURE:

15 °C

The smoke meter meets the calibration requirements of the current Vehicle and Operator Services Agency specification *V/MOT/08/19/1.

The uncertainty of measurement is $\pm(0.12m^3 + 1 \text{ least significant digit})$

Signed: _____

RECALIBRATION

DUE BEFORE: 03rd DECEMBER 2020

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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DATE OF ISSUE

19th NOVEMBER 2019

CERTIFICATE NUMBER 827439



0060



PAGE 1 OF 1 PAGE

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT: GENERAL DIAGNOSTIC

APPROVED SIGNATORY

Number	940
Name (please print)	RYAN MCCALLON
Signature	

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: BOSCH
Model: BEA 050 Issue no. 9
Serial No: 230052938
Init PEF: 0.519 Final PEF: 0.519

LOCATION DETAILS

Contact: MR CARLTON
Address: KINGSBURY MOT CENTRE, 291
KINGSBURY SQUARE, MELLISHAM, WILTS, SN2 4HL
VTS No: 6941BB

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0408 / 23668

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	3.505 %	1985 ppm	13.96 %	0.00 %
2	Concentration value x PEF		1030 ppm		
3	Initial analyser reading	3.517 %	1063 ppm	14.17 %	0.02 %

INITIAL O₂ READING FOR AMBIENT AIR 21.00 % MANOMETER INDICATION 1000 mbar

FINAL AMBIENT TEMPERATURE 15 °C CORRECTION APPLIED 0 mbar

PRESSURE INDICATED BY ANALYSER 1014 mbar AMBIENT PRESSURE (after corr) 1000 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	3.505 %	1985 ppm	13.96 %	0.00 %
5	Concentration value x PEF		1030 ppm		
6	Final analyser reading	3.497 %	1058 ppm	13.98 %	0.00 %
7	Final O ₂ reading for ambient air				21.00 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.
The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed: _____

RECALIBRATION
DUE BEFORE: 03rd JUNE 2020

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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CERTIFICATE OF CALIBRATION

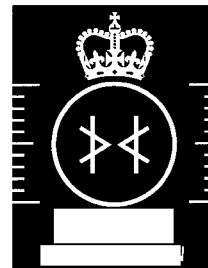
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DATE OF ISSUE

12th NOVEMBER 2020

CERTIFICATE NUMBER

854512



0060



PAGE 1 OF 1 PAGE

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION &
SERVICING CONTACT:

GENEAL OZ

DIESEL SMOKE METER

SMOKE METER DETAILS

Manufacturer: BOSCH

Model: RTM 430 Issue no. 9

Serial No: 232 927 138

LOCATION DETAILS

Contact: MR CARLYON

Address: KINGSBURY MOT CENTRE
MELKSHAM, WILTSHIRE, SN12 6HL

VTS No: 69413B

INITIAL CALIBRATION

		True filter value, m ³	Smoke meter reading, m ³	Reference filter Serial No	UKAS Calibration Certificate No	
1	Garage filter		1.75			
2	Reference filter 1	0.95	0.97	E3	0060	845105
3	Reference filter 2	1.91	1.94	E2	0060	845104
4	Reference filter 3	3.38	3.40	E1	0060	845103

Unless otherwise stated, the reference filters were calibrated at UKAS Laboratory 0060

FINAL CALIBRATION

		True filter value, m ³	Smoke meter reading, m ³
5	Garage filter		1.74
6	Reference filter 1	0.95	0.91
7	Reference filter 2	1.91	1.88
8	Reference filter 3	3.38	3.33

Oil temperature probe calibration results for 2002
specification machines (in the range 50-90°C)

Probe/DSM indication	68 °C
Reference thermometer indication	70 °C

FINAL AMBIENT TEMPERATURE:

16 °C

The smoke meter meets the calibration requirements of the current Vehicle and Operator Services Agency specification *VI/MOT/08/19/1.
The uncertainty of measurement is $\pm(0.12m^3 + 1 \text{ least significant digit})$

Signed: _____

RECALIBRATION

DUE BEFORE: 26th NOVEMBER 2021

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

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DATE OF ISSUE

12th NOVEMBER 2020

CERTIFICATE NUMBER

848266



0060



PAGE 1 OF 1 PAGE

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTICS

APPROVED SIGNATORY

Number

940

Name
(please print)

RYAN KELGALCON

Signature

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: BEA BOSCH

Model: BEA 050 Issue no. 10

Serial No: 230 052 938

Init PEF: 0.533 Final PEF: 0.533

LOCATION DETAILS

Contact: MR CARLYON

Address: KINGSBURY MOT CENTRE

MELKSHAM, WILTSHIRE, SN12 6HL

VTS No: 69413B

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0408 / 23877

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	3.515 %	2015 ppm	14.04 %	0.00 %
2	Concentration value x PEF		1074 ppm		
3	Initial analyser reading	3.518 %	1038 ppm	14.02 %	0.06 %

INITIAL O₂ READING FOR AMBIENT AIR 20.96 % MANOMETER INDICATION 1005 mbar

FINAL AMBIENT TEMPERATURE 16 °C CORRECTION APPLIED 0 mbar

PRESSURE INDICATED BY ANALYSER 1017 mbar AMBIENT PRESSURE (after corr) 1005 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	3.515 %	2015 ppm	14.04 %	0.00 %
5	Concentration value x PEF		1074 ppm		
6	Final analyser reading	3.502 %	1075 ppm	13.99 %	0.03 %
7	Final O ₂ reading for ambient air				21.01 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/CAL. The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed: _____

RECALIBRATION

DUE BEFORE: 26th MAY 2021

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

DATE OF ISSUE

06th MAY 2021

CERTIFICATE NUMBER

866601



0060



PAGE 1 OF 1 PAGE

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION &
SERVICING CONTACT:

GENCOAL DZACNO5770

APPROVED SIGNATORY

Number

940

Name
(please print)

AVAN KZICACON

Signature

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: BOSCH

Model: DEA 050 Issue no. 10

Serial No: 230 052 935

Init PEF: 0.537 Final PEF: 0.537

LOCATION DETAILS

Contact: MR CARLYON

Address: KZNC5B0Y MOT CENTRE

MELKSHAM, WILTSHIRE, SN12 6HL

VTS No: 69413B

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0408 / 24091

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	3.490 %	1970 ppm	13.89 %	0.00 %
2	Concentration value x PEF		1058 ppm		
3	Initial analyser reading	3.493 %	1065 ppm	14.06 %	0.09 %

INITIAL O₂ READING FOR AMBIENT AIR 20.97 %

MANOMETER INDICATION 1003 mbar

FINAL AMBIENT TEMPERATURE 18 °C

CORRECTION APPLIED 0 mbar

PRESSURE INDICATED BY ANALYSER 1007 mbar

AMBIENT PRESSURE (after corr) 1003 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	3.490 %	1970 ppm	13.89 %	0.00 %
5	Concentration value x PEF		1058 ppm		
6	Final analyser reading	3.509 %	1059 ppm	13.98 %	0.06 %
7	Final O ₂ reading for ambient air				21.03 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.
The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed: _____

RECALIBRATION

DUE BEFORE:

06th NOVEMBER 2021

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

20th OCTOBER 2021

DATE OF ISSUE

CERTIFICATE NUMBER 870612



0060



PAGE 1 OF 1 PAGE

CSA Group, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTIC

APPROVED SIGNATORY

Number	940
Name (please print)	Mr R ZIGGON
Signature	

DIESEL SMOKE METER

SMOKE METER DETAILS

Manufacturer: BOSCH

Model: NTM 430 Issue no: 9

Serial No: 232 927 138

LOCATION DETAILS

Contact: Mr CARLTON

Address: KINGSBURY MOT CENTRE
LILKHAZE, SN12 6HL

VTs No: 694133

INITIAL CALIBRATION

		True filter value, m ³	Smoke meter reading, m ³	Reference filter Serial No	UKAS Calibration Certificate No	
1	Garage filter		1.76			
2	Reference filter 1	0.95	0.93	C3	0060	875167
3	Reference filter 2	1.91	1.90	C2	0060	875166
4	Reference filter 3	3.38	3.39	C1	0060	875165

Unless otherwise stated, the reference filters were calibrated at UKAS Laboratory 0060

FINAL CALIBRATION

		True filter value, m ³	Smoke meter reading, m ³
5	Garage filter		1.75
6	Reference filter 1	0.95	0.90
7	Reference filter 2	1.91	1.87
8	Reference filter 3	3.38	3.34

Oil temperature probe calibration results for 2002 specification machines (in the range 50-90°C)	
Probe/DSM indication	68 °C
Reference thermometer indication	71 °C

FINAL AMBIENT TEMPERATURE:

18 °C

The smoke meter meets the calibration requirements of the current Vehicle and Operator Services Agency specification *V1/MOT/08/19/1.

The uncertainty of measurement is $\pm(0.12m^3 + 1 \text{ least significant digit})$

Signed: _____

RECALIBRATION

DUE BEFORE: 03rd NOVEMBER 2022

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

20th OCTOBER 2021

DATE OF ISSUE:

CERTIFICATE NUMBER:

876924



0060



CSA Group Testing Ltd, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENEX DIAGNOSTIC

APPROVED SIGNATORY

Number	940
Name(print)	MAN KZILGALCON
Signature	

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: BOSCH
Model: BEA 050 Issue no. 3
Serial No: 230 052 938
Init PEF: 0.512 Final PEF: 0.512

LOCATION DETAILS

Contact: MAN CARLYON
Address: KINGSBURY MOT CENTRE
WILTSHIRE, SN12 6HL
VTS No: 69413B

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0408/24418

	Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1 Concentration of calibration gas	3.515 %	1995 ppm	14.07 %	0.00%
2 Concentration value x PEF		1021 ppm		
3 Initial analyser reading	3.517 %	1069 ppm	14.70 %	0.00 %

INITIAL O₂ READING FOR AMBIENT AIR 20.96 % MANOMETER INDICATION 1004 mbar
FINAL AMBIENT TEMPERATURE 18 °C CORRECTION APPLIED 0 mbar
PRESSURE INDICATED BY ANALYSER 1002 mbar AMBIENT PRESSURE (after corr) 1004 mbar

FINAL CALIBRATION CHECK

	Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4 Concentration of calibration gas	3.515 %	1995 ppm	14.07 %	0.00%
5 Concentration value x PEF		1021 ppm		
6 Initial analyser reading	3.546 %	1042 ppm	14.19 %	0.00 %
7 Final O ₂ reading for ambient air				21.06 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.

The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed: _____

RECALIBRATION DUE BEFORE:

03rd MAY 2022

Equipment with serial numbers used to carry out the calibration:

Barometer/Manometer: 052/08

Multimeter: 65902148

Flowmeter: F137968

Insulation Continuity Tester: N/A

Thermometer: US000643

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirement of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

12th April 2022

DATE OF ISSUE:

CERTIFICATE NUMBER: 887937



0060



CSA Group Testing Ltd, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTIC

APPROVED SIGNATORY	
Number	940
Name(print)	MAN KZL GALLON
Signature	

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: BOSCH
 Model: BEA 050 Issue no. 3
 Serial No: 230 052 938
 Init PEF: 0.526 Final PEF: 0.526

LOCATION DETAILS

Contact: MAN CARLYON
 Address: KINGSBURY MOT CENTRE
MEIKSHAM, WILTSHIRE, SN12 6HL
 VTS No: 694138

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0.4.0.8/244.1.8

	Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1 Concentration of calibration gas	3.515 %	1995 ppm	14.07 %	0.00 %
2 Concentration value x PEF		1049 ppm		
3 Initial analyser reading	3.514 %	1074 ppm	14.12 %	0.00 %

INITIAL O₂ READING FOR AMBIENT AIR 21.08 % MANOMETER INDICATION 998 mbar

FINAL AMBIENT TEMPERATURE 14 °C CORRECTION APPLIED 0 mbar

PRESSURE INDICATED BY ANALYSER 1007 mbar AMBIENT PRESSURE (after corr) 998 mbar

FINAL CALIBRATION CHECK

	Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4 Concentration of calibration gas	3.515 %	1995 ppm	14.07 %	0.00 %
5 Concentration value x PEF		1049 ppm		
6 Final analyser reading	3.509 %	1068 ppm	14.06 %	0.00 %
7 Final O ₂ reading for ambient air				21.14 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.

The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed: >

RECALIBRATION DUE BEFORE:

26th OCTOBER 2022

Equipment with serial numbers used to carry out the calibration:

Barometer/Manometer:	052/08
Multimeter:	65902/48
Flowmeter:	F133968

Insulation Continuity Tester:	N/A
Thermometer:	V5000643

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirement of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

11th OCTOBER 2022

DATE OF ISSUE:

CERTIFICATE NUMBER: 894827



0060



CSA Group Testing Ltd, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTIC

APPROVED SIGNATORY	
Number	940
Name(print)	NIHAN KILGALCON
Signature	

DIESEL SMOKE METER

SMOKE METER DETAILS

Manufacturer: BOSCH
 Model: NTM 430 Issue no. 9
 Serial No: 232 927 138

LOCATION DETAILS

Contact: MR CALLYON
 Address: KINGSWAY MOT CENTRE, SN12 6HL
 VTS No: 694185

INITIAL CALIBRATION

	True filter value, m ³	Smoke meter reading, m ³	Reference filter serial No.	UKAS Calibration Certificate No. <u>0060</u>
1 Garage filter		1.76		
2 Reference filter 1	0.89	0.94	D3	895772
3 Reference filter 2	1.88	1.91	D2	895771
4 Reference filter 3	3.38	3.40	D1	895770

Unless otherwise stated, the reference filters were calibrated at UKAS Laboratory 0060

FINAL CALIBRATION

	True filter value, m ³	Smoke meter reading, m ³	Oil temperature probe calibration results for 2002 specification machines in the range 50-90 °C:
5 Garage filter		1.73	Probe/DSM indication <u>31</u> °C
6 Reference filter 1	0.89	0.85	Ref. thermometer indication <u>72</u> °C
7 Reference filter 2	1.88	1.86	Final ambient temperature <u>14</u> °C
8 Reference filter 3	3.38	3.32	

The smoke meter meets the calibration requirements of the current Vehicle and Operator Services Agency specification *VI/MOT/08/19/1.

The uncertainty of measurement is $\pm(0.12m^{-1} + 1 \text{ least significant digit})$

Signed: _____

RECALIBRATION DUE BEFORE:

25th OCTOBER 2023

Equipment with serial numbers used to carry out the calibration:

DESCRIPTION/MODEL
Insulation continuity tester:
Multimeter:
Thermometer:
Set of Density Filters:

SERIAL NO.
N/A
65902146
V5000643
As overleaf AS ABOVE

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirement of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

11th OCTOBER 2022

DATE OF ISSUE:

CERTIFICATE NUMBER: 898902



0060



CSA Group Testing Ltd, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTIC

APPROVED SIGNATORY

Number	940
Name(print)	MAN KZLGACON
Signature	

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: BOSCH
 Model: BSA 050 Issue no. 3
 Serial No: 230 052 938
 Init PEF: 0.530 Final PEF: 0.530

LOCATION DETAILS

Contact: MR CARLYON
 Address: KINGSBURY MOT CENTRE, SN12 6HL
 VTS No: 694188

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0.40.8/2.4.4.1.8

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	3.515 %	1995 ppm	14.07 %	0.00%
2	Concentration value x PEF		1057 ppm		
3	Initial analyser reading	3.506 %	1072 ppm	14.11 %	0.00 %

INITIAL O₂ READING FOR AMBIENT AIR 21.00 % MANOMETER INDICATION 1024 mbar

FINAL AMBIENT TEMPERATURE 14 °C CORRECTION APPLIED 0 mbar

PRESSURE INDICATED BY ANALYSER 1026 mbar AMBIENT PRESSURE (after corr) 1024 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	3.515 %	1995 ppm	14.07 %	0.00%
5	Concentration value x PEF		1057 ppm		
6	Final analyser reading	3.497 %	1068 ppm	14.09 %	0.00 %
7	Final O ₂ reading for ambient air				21.07 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.

The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed:

RECALIBRATION DUE BEFORE:

25th APRIL 2023

Equipment with serial numbers used to carry out the calibration:

Barometer/Manometer: 111/48
 Multimeter: 65902146
 Flowmeter: F153968

Insulation Continuity Tester: N/A
 Thermometer: V5000643

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirement of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

25th APRIL 2023

DATE OF ISSUE:

CERTIFICATE NUMBER:



0060



CSA Group Testing Ltd, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTIC

APPROVED SIGNATORY	
Number	940
Name(print)	MYAN KZLACEN
Signature	

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: BOSCH
Model: BEA OSE Issue no. 3
Serial No: 230 052 938
Init PEF: 0.516 Final PEF: 0.516

LOCATION DETAILS

Contact: MR CARLYON
Address: KINGSBURY MOT CENTRE
WILTSHIRE, SN12 6HL
VTS No: 694188

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0.4.0.8/2.4.6.2.2

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	3.475 %	1965 ppm	13.89 %	0.00 %
2	Concentration value x PEF		1014 ppm		
3	Initial analyser reading	3.521 %	1049 ppm	14.06 %	0.00 %

INITIAL O₂ READING FOR AMBIENT AIR 20.97 % MANOMETER INDICATION 1014 mbar

FINAL AMBIENT TEMPERATURE 12 °C CORRECTION APPLIED 0 mbar

PRESSURE INDICATED BY ANALYSER 1021 mbar AMBIENT PRESSURE (after corr) 1014 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	3.475 %	1965 ppm	13.89 %	0.00 %
5	Concentration value x PEF		1014 ppm		
6	Final analyser reading	3.486 %	1028 ppm	13.84 %	0.00 %
7	Final O ₂ reading for ambient air				21.22 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.

The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed: _____

RECALIBRATION DUE BEFORE:

25th OCTOBER 2023

Equipment with serial numbers used to carry out the calibration:

Barometer/Manometer:	111/48
Multimeter:	65902146
Flowmeter:	F133968

Insulation Continuity Tester:	N/A
Thermometer:	V5000643

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

18th OCTOBER 2023

DATE OF ISSUE:

CERTIFICATE NUMBER:

922658



0060



CSA Group Testing Ltd, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTIC

APPROVED SIGNATORY

Number

940

Name(print)

NUAN KZLALLON

Signature

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: Bosch

Model: Ben 050 Issue no. S

Serial No: 230 052 938

Init PEF: 0.533 Final PEF: 0.533

LOCATION DETAILS

Contact: MR CARLYON

Address: KINGSBURY MOT CENTRE
MELKSHAM, WILTSHIRE, SN12 6HL

VTs No: 694133

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 040825352

	Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1 Concentration of calibration gas	3.505 %	1985 ppm	13.89 %	0.00 %
2 Concentration value x PEF		1058 ppm		
3 Initial analyser reading	3.506 %	1085 ppm	14.17 %	0.00 %

INITIAL O₂ READING FOR AMBIENT AIR 21.18 % MANOMETER INDICATION 987 mbar

FINAL AMBIENT TEMPERATURE 14 °C CORRECTION APPLIED 0 mbar

PRESSURE INDICATED BY ANALYSER 996 mbar AMBIENT PRESSURE (after corr) 987 mbar

FINAL CALIBRATION CHECK

	Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4 Concentration of calibration gas	3.505 %	1985 ppm	13.89 %	0.00 %
5 Concentration value x PEF		1058 ppm		
6 Final analyser reading	3.484 %	1076 ppm	14.10 %	0.00 %
7 Final O ₂ reading for ambient air				21.25 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.

The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed:

RECALIBRATION DUE BEFORE:

25th APRIL 2024

Equipment with serial numbers used to carry out the calibration:

Barometer/Manometer:

111/48

Multimeter:

6590148

Flowmeter:

1133968

Insulation Continuity Tester:

N/A

Thermometer:

BPT072

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

18th OCTOBER 2023

DATE OF ISSUE:

CERTIFICATE NUMBER:



0060



CSA Group Testing Ltd, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTIC

APPROVED SIGNATORY

Number	940
Name(print)	NUAN KZLEALLON
Signature	

DIESEL SMOKE METER

SMOKE METER DETAILS

Manufacturer: BOSCH
Model: MTM 430 Issue no. 9
Serial No: 232 927 138

LOCATION DETAILS

Contact: MR CARLTON
Address: KINGSBURY MOT CENTRE
MELKSHAM, WILTSHIRE, SN12 6HL
VTS No: 6941BR

INITIAL CALIBRATION

	True filter value, m	Smoke meter reading, m	Reference filter serial No.	UKAS Calibration Certificate No. 0060
1 Garage filter		1.76		
2 Reference filter 1	0.95	0.98	E3	909256
3 Reference filter 2	1.91	1.94	E2	909255
4 Reference filter 3	3.37	3.39	E1	909254

Unless otherwise stated, the reference filters were calibrated at UKAS Laboratory 0060

FINAL CALIBRATION

	True filter value, m	Smoke meter reading, m	01 temperature probe calibration results for 2002 specification machines (in the range 50-90°C)
5 Garage filter		1.74	Probe/DSM indication 64°C
6 Reference filter 1	0.95	0.96	Ref. thermometer indication 65°C
7 Reference filter 2	1.91	1.92	Final ambient temperature 14°C
8 Reference filter 3	3.37	3.37	

The smoke meter meets the calibration requirements of the current Vehicle and Operator Services Agency specification *VI/MOT/08/19/1.

The uncertainty of measurement is $\pm(0.12m^{-1} + 1 \text{ least significant digit})$

Signed:

RECALIBRATION DUE BEFORE:

25th OCTOBER 2024

Equipment with serial numbers used to carry out the calibration:

DESCRIPTION/MODEL
Insulation continuity tester:
Multimeter:
Thermometer:

SERIAL NO.
N/A
65902148
13PT072

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

16th APRIL 2024

DATE OF ISSUE:

CERTIFICATE NUMBER:

937181



0060



CSA Group Testing Ltd, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTIC

APPROVED SIGNATORY

Number

940

Name(print)

MIAN
KZLEALLON

Signature

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer:

Bosch

Model:

BEA 050

Issue no.

6

Serial No:

230 052 938

Init PEF:

0.530

Final PEF:

0.530

LOCATION DETAILS

Contact:

MIAN CARLTON

Address:

KZNESBURY MOT

CENTRE, WILTSHIRE, SN12 6HL

VTS No:

6941BB

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 040.8253.52

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	3.505 %	1985 ppm	13.89 %	0.00%
2	Concentration value x PEF		1652 ppm		
3	Initial analyser reading	3.507 %	1073 ppm	14.02 %	0.00 %

INITIAL O₂ READING FOR AMBIENT AIR 21.04 %

MANOMETER INDICATION 1011 mbar

FINAL AMBIENT TEMPERATURE 12 °C

CORRECTION APPLIED 0 mbar

PRESSURE INDICATED BY ANALYSER 1020 mbar

AMBIENT PRESSURE (after corr) 1011 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	3.505 %	1985 ppm	13.89 %	0.00%
5	Concentration value x PEF		1652 ppm		
6	Final analyser reading	3.496 %	1668 ppm	13.95 %	0.00 %
7	Final O ₂ reading for ambient air				21.12 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.

The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed:

RECALIBRATION DUE BEFORE:

25th OCTOBER 2024

Equipment with serial numbers used to carry out the calibration:

Barometer/Manometer:

111148

Multimeter:

65902148

Flowmeter:

133968

Insulation Continuity Tester:

NIA

Thermometer:

BPT072

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirement of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

22nd OCTOBER 2024

DATE OF ISSUE:

CERTIFICATE NUMBER: 942878



0060



CSA Group Testing Ltd, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTIC

APPROVED SIGNATORY	
Number	940
Name(print)	MAN KZLAWON
Signature	

DIESEL SMOKE METER

SMOKE METER DETAILS

Manufacturer: Bosch
Model: MTM 430 Issue no. 9
Serial No: 232 927 138

LOCATION DETAILS

Contact: MAN CARLYON
Address: KINESBURY MOT CENTRE,
MILKSHAM, SN12 6HL
VTS No: 6941BB

INITIAL CALIBRATION

		True filter value, m ³	Smoke meter reading, m ³	Reference filter serial No.	UKAS Calibration Certificate No. <u>0060</u>
1	Garage filter		1.76		
2	Reference filter 1	0.95	0.97	E3	943610
3	Reference filter 2	1.91	1.94	E2	943609
4	Reference filter 3	3.37	3.39	E1	943608

Unless otherwise stated, the reference filters were calibrated at UKAS Laboratory 0060

FINAL CALIBRATION

		True filter value, m ³	Smoke meter reading, m ³	Oil temperature probe calibration results for 2002 specification machines (in the range 50-90°C)
5	Garage filter		1.74	Probe/DSM indication <u>64</u> °C
6	Reference filter 1	0.95	0.97	Ref. thermometer indication <u>66</u> °C
7	Reference filter 2	1.91	1.92	Final ambient temperature <u>16</u> °C
8	Reference filter 3	3.37	3.38	

The smoke meter meets the calibration requirements of the current Vehicle and Operator Services Agency specification *VI/MOT/08/19/1.

The uncertainty of measurement is $\pm(0.12m^{3} + 1 \text{ least significant digit})$

Signed: _____

Equipment with serial numbers used to carry out the calibration:

DESCRIPTION/MODEL
Insulation continuity tester:
Multimeter:
Thermometer:

RECALIBRATION DUE BEFORE:

25th OCTOBER 2025

SERIAL NO.
N/A
65902146
BAT410

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirement of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

22ND OCTOBER 2024

DATE OF ISSUE:

CERTIFICATE NUMBER:

946198



0060



CSA Group Testing Ltd, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTIC

APPROVED SIGNATORY	
Number	940
Name(print)	MIAN KILFALLAN
Signature	

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: Bosch
Model: BEA ese Issue no. 6
Serial No: 230 052 938
Init PEF: 0.533 Final PEF: 0.533

LOCATION DETAILS

Contact: MR CARLYON
Address: KINGSBURY MOT
CENTRE, MELKSHAM, SN12 6UL
VTS No: 694188

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0.40.8/2.53.52

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	3.505 %	1985 ppm	13.89 %	0.00%
2	Concentration value x PEF		1058 ppm		
3	Initial analyser reading	3.522 %	1104 ppm	14.04 %	0.00 %

INITIAL O₂ READING FOR AMBIENT AIR 21.05 % MANOMETER INDICATION 1023 mbar
FINAL AMBIENT TEMPERATURE 16 °C CORRECTION APPLIED 0 mbar
PRESSURE INDICATED BY ANALYSER 1033 mbar AMBIENT PRESSURE (after corr) 1023 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	3.505 %	1985 ppm	13.89 %	0.00%
5	Concentration value x PEF		1058 ppm		
6	Final analyser reading	3.516 %	1082 ppm	13.97 %	0.00 %
7	Final O ₂ reading for ambient air				21.10 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.

The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed: _____

RECALIBRATION DUE BEFORE:

25TH APRIL 2025

Equipment with serial numbers used to carry out the calibration:

Barometer/Manometer: 111/48
Multimeter: 65902146
Flowmeter: 633968

Insulation Continuity Tester: N/A
Thermometer: BRT410

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

This certificate is issued in accordance with the laboratory accreditation requirement of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement realised at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

16th APRIL 2025

DATE OF ISSUE:

CERTIFICATE NUMBER: 960126



0060



CSA Group Testing Ltd, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTICS

APPROVED SIGNATORY

Number

940

Name(print)

MAN

KILGALLEN

Signature

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: BOSCH

Model: BEN ESE Issue no. 6

Serial No: 230 052 938

Init PEF: 0.528 Final PEF: 0.528

LOCATION DETAILS

Contact: MR CARLTON

Address: KINGSBURY MOT CENTRE, SN12 6HL

VTS No: 694188

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0408/25.3.52

	Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1 Concentration of calibration gas	3.505 %	1985 ppm	13.89 %	0.00 %
2 Concentration value x PEF		1048 ppm		
3 Initial analyser reading	3.536 %	1077 ppm	14.03 %	0.02 %

INITIAL O₂ READING FOR AMBIENT AIR 21.18 % MANOMETER INDICATION 998 mbar

FINAL AMBIENT TEMPERATURE 12 °C CORRECTION APPLIED 0 mbar

PRESSURE INDICATED BY ANALYSER 1007 mbar AMBIENT PRESSURE (after corr) 998 mbar

FINAL CALIBRATION CHECK

	Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4 Concentration of calibration gas	3.505 %	1985 ppm	13.89 %	0.00 %
5 Concentration value x PEF		1048 ppm		
6 Final analyser reading	3.524 %	1062 ppm	13.92 %	0.00 %
7 Final O ₂ reading for ambient air				21.26 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.

The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed:

RECALIBRATION DUE BEFORE:

25th OCTOBER 2025

Equipment with serial numbers used to carry out the calibration:

Barometer/Manometer:	111/48
Multimeter:	65902148
Flowmeter:	133968

Insulation Continuity Tester:	N/A
Thermometer:	BPT072

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

22ND OCTOBER 2025

DATE OF ISSUE:

CERTIFICATE NUMBER: 963397



0060



CSA Group Testing Ltd, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTIC

APPROVED SIGNATORY	
Number	940
Name(print)	MIAN KILBACON
Signature	

DIESEL SMOKE METER

SMOKE METER DETAILS

Manufacturer: Bosch
Model: RTM 430 Issue no. 9
Serial No: 232 927 138

LOCATION DETAILS

Contact: MI BRAUND
Address: KINGSBURY MOT
CENTRE LTD, SN12 6HL
VTS No: 694188 TRA N.K

INITIAL CALIBRATION

	True filter value, m ⁻¹	Smoke meter reading, m ⁻¹	Reference filter serial No.	UKAS Calibration Certificate No. <u>0060</u>
1 Garage filter		1.76		
2 Reference filter 1	0.89	0.92	03	963474
3 Reference filter 2	1.88	1.90	02	963473
4 Reference filter 3	3.38	3.41	01	963472

Unless otherwise stated, the reference filters were calibrated at UKAS Laboratory 0060

FINAL CALIBRATION

	True filter value, m ⁻¹	Smoke meter reading, m ⁻¹	Oil temperature probe calibration results for 2002 specification machines (in the range 50-90°C)
5 Garage filter		1.74	Probe/DSM indication <u>63</u> °C
6 Reference filter 1	0.89	0.91	Ref. thermometer indication <u>68</u> °C
7 Reference filter 2	1.88	1.90	Final ambient temperature <u>15</u> °C
8 Reference filter 3	3.38	3.39	

The smoke meter meets the calibration requirements of the current Vehicle and Operator Services Agency specification *VI/MOT/08/19/1.

The uncertainty of measurement is $\pm(0.12\text{m}^{-1} + 1 \text{ least significant digit})$

Signed: _____

Equipment with serial numbers used to carry out the calibration:

RECALIBRATION DUE BEFORE:

25TH OCTOBER 2026

DESCRIPTION/MODEL
Insulation continuity tester:
Multimeter:
Thermometer:

SERIAL NO.
N/A
65902148
811072

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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CERTIFICATE OF CALIBRATION

ISSUED BY CSA GROUP TESTING UK LTD

22ND OCTOBER 2023

DATE OF ISSUE:

CERTIFICATE NUMBER: 966996



0060



CSA Group Testing Ltd, Unit 6, Hawarden Industrial Park, Hawarden, Deeside, CH5 3US

FOR CALIBRATION & SERVICING CONTACT:

GENERAL DIAGNOSTIC

APPROVED SIGNATORY	
Number	940
Name(print)	NIAN KILKILAN
Signature	

VEHICLE EXHAUST GAS ANALYSER

ANALYSER DETAILS

Manufacturer: BOSCH
Model: Dea ese Issue no. 6
Serial No: 230 052 938
Init PEF: 0.532 Final PEF: 0.532

LOCATION DETAILS

Contact: MA BRAUNO
Address: KINGSBURY MOT
CENTRE LTD, SN12 6HL
VTS No: TBA

INITIAL CALIBRATION CHECK

Calibration Gas Certificate No: 0408125873

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
1	Concentration of calibration gas	3.470 %	2000 ppm	13.87 %	0.00%
2	Concentration value x PEF		1064 ppm		
3	Initial analyser reading	3.522 %	1089 ppm	14.05 %	0.00 %

INITIAL O₂ READING FOR AMBIENT AIR 20.82 % MANOMETER INDICATION 990 mbar

FINAL AMBIENT TEMPERATURE 15 °C CORRECTION APPLIED +5 mbar

PRESSURE INDICATED BY ANALYSER 1000 mbar AMBIENT PRESSURE (after corr) 985 mbar

FINAL CALIBRATION CHECK

		Carbon monoxide (CO)	Hydrocarbons (HC)	Carbon Dioxide (CO ₂)	Oxygen (O ₂)
4	Concentration of calibration gas	3.470 %	2000 ppm	13.87 %	0.00%
5	Concentration value x PEF		1064 ppm		
6	Final analyser reading	3.479 %	1084 ppm	14.06 %	0.00 %
7	Final O ₂ reading for ambient air				21.03 %

The analyser meets the calibration requirements of the current Vehicle and Operator Services Agency specification VPB/07/24/20/CAL.

The uncertainty of measurement is $\pm(1.2\%$ of gas concentration + 1 least significant digit)

Signed: _____

RECALIBRATION DUE BEFORE:

25TH APRIL 2026

Equipment with serial numbers used to carry out the calibration:

Barometer/Manometer: E19091660

Multimeter: 65902148

Flowmeter: F133968

Insulation Continuity Tester: NIA

Thermometer: BPT077

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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