Laser EGA Series
8559 Digital CO Meter

Handheld Exhaust Gas Analyser

Stock No: MAN8559 Rev: 1.00123 **January 2023**

CONTENTS

Laser EGA OVERVIEW

Your Laser exhaust gas analyser has the ability to measure up to 3 different gases,
Depending on your options it measures or calculates:

- Carbon Monoxide 0-10,000ppm (CO) if fitted
- Carbon Monoxide 0-10% (CO) if fitted
- Carbon Dioxide (CO_2) if fitted
- Nitric Oxide (NO)
- Nitrogen Oxide (NOx)
- Corrected Carbon Monoxide (COk)

Your Laser EGA has a protective rubber cover with magnets for “hands-free” operation and is supplied with an exhaust probe and battery charger with 3 NiMH batteries.

Your Laser EGA has a large 6 line display showing data and test results based on your actions. The display bottom line also highlights analyser status at all times.

Your Laser EGA prints test reports using an optional infrared printer.

Your Laser EGA stores up to 45 logs.

You can enter 2 lines of 24 characters on your test results printout.

Laser LINK wirelessly connects optional Laser LINK devices to your analyser.

ANALYSER FEATURES AND KEYPAD

KEYPAD BUTTONS

ICON	DESCRIPTION
	Save log - Long press to store data
	Print report - Short press to print a report - Analyser offers a destination choice when wireless and irda fitted
	Navigate up - Short press to scroll up
	Enter key - Used to select the current option - also selects torch in some dial positions
	Navigate down - Short press to scroll down
	Data hold - Short press to hold current data on screen (see status bar section)
	Pump toggle - long press to toggle the pump on and off

Function keys

Rotary dial

ANALYSER LAYOUT

BATTERIES

BATTERY TYPE

Your Laser EGA uses rechargeable Nickel Material Hydride (NiMH) batteries - Using other battery types may void your analyser's warranty.

WARNING

Although you can use Alkaline batteries you must not charge your analyser with Alkaline batteries fitted.

Do not mix NiMH cells with different capacities or from different manufacturers - All batteries must be identical.

REPLACING BATTERIES

Turn over your analyser, remove protective rubber cover, find battery compartment & fit 3 NiMH "AA" rechargeable batteries ensuring correct battery polarity. Replace battery cover & protective rubber cover.

TIME AND DATE

After changing batteries reset your analyser time & date.

CHARGING NiMH BATTERIES

Your Laser EGA uses a standard Micro USB connector - For best results turn off then connect your charger. Charging indicator will illuminate then turn off when charging is complete.

Your first charge should be for 8 hours - Thereafter NiMH batteries can be topped up at any time, even for short periods

If your batteries discharge and your analyser enters a low power shutdown, 1 hour charge provides approx. 2 hours continuous use.

BATTERY DISPOSAL

Always dispose of depleted batteries using approved disposal methods to protect our environment.

GENERAL SAFETY

SAFETY WARNING

Your analyser extracts combustion gases that may be toxic in relativity low concentrations. These gases are exhausted from the back of the analyser. This analyser must only be used in well-ventilated locations by trained and competent persons after due consideration of all the potential hazards.

Portable gas detectors should conduct “bump” tests before relying on units to verify atmospheres are free from hazards.

A “bump” test is a way to check an instrument works within acceptable limits by briefly exposing it to known gas mixtures to change the output of all sensors present.

NOTE: This is different from a calibration where your analyser is exposed to known gas mixtures but allowed to settle to a steady figure with readings adjusted to the stated gas concentration of the test gas.

Protection Against Electric Shock
(In accordance with EN 61010-1:2010):

This analyser is designed as Class III equipment and should only be connected to SELV circuits. The battery charger is designated as:

- Class II equipment
- Installation category II
- Pollution degree 2
- Indoor use only
- Altitude to 2000m
- Ambient temperature 0°C-40°C
- Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50%RH at 40°C
- Mains supply fluctuations not to exceed 10% of the nominal voltage

FIRST TIME USE

Charge your analyser batteries for 8 hours - an overnight charge should be sufficient for an average 8 hour day.

Take time to read this manual fully and be aware your analyser configuration may not support all features explained in this manual. Before using your analyser ensure it is set up for your requirements.

NOTE: Your analyser STATUS bar displays current time, date and battery status - Check time & date are correct as they can only be changed if you have not stored logs in Memory to protect the integrity of your stored data.

GENERAL OPERATING PRINCIPLE

Using your Laser EGA is simple with the rotary dial and user interface. Most tests can be made with little user activity.

Your analyser status bar offers options based on tasks you are performing and displays useful information and messages.

QUICK START

Turn on your analyser in fresh outdoor air pressing the ⏻ button for 2 seconds. Your analyser starts a 60 second zero calibration - once completed select your tests by turning the analyser rotary dial.

USER INTERFACE

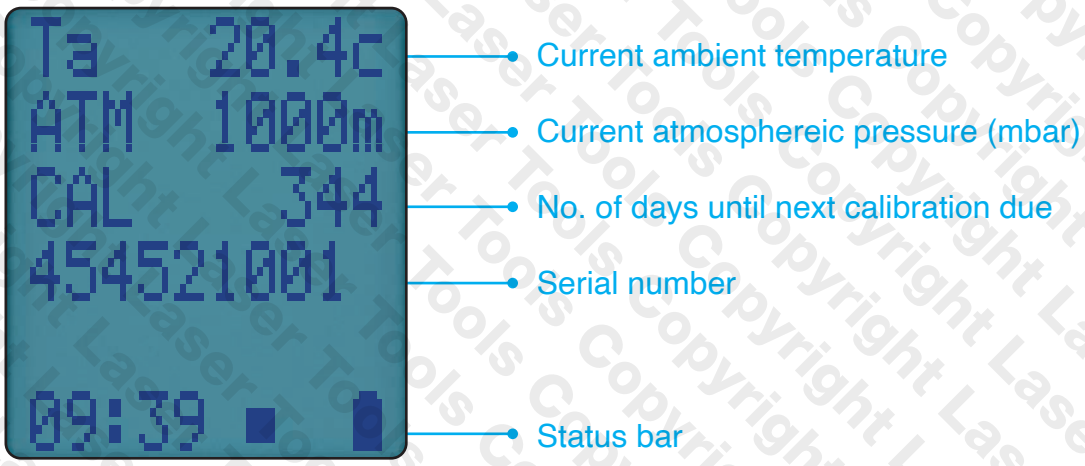
Your analyser display shows 5 lines of tests & a status bar. The backlight activates each button press then turns off after 10 seconds.

Navigate through your options and menu choices via 3 dedicated ▲ ▼ & ↵ buttons.

Button presses are either short or long.

STATUS

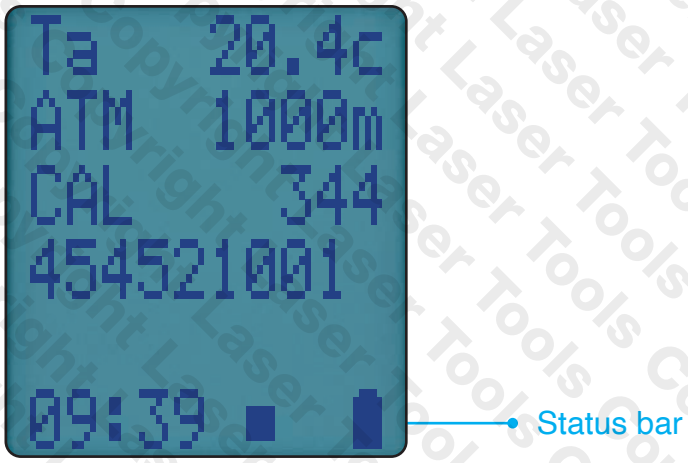
Rotate dial to “Status” :



STATUS BAR

Status bar shows analyser status and offers options based on your settings.

Navigate through status bar options via ▲ & ▼ buttons when status bar is on display.



STATUS BAR LAYOUT

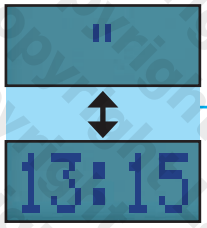
Status bar splits into 2 zones, Message & Icons shown below:

STATUS BAR MESSAGE AREA

CLOCK FUNCTION

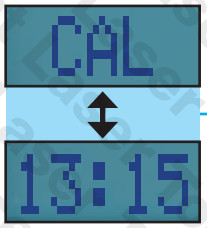
Displays current time

DATA HOLD FUNCTION



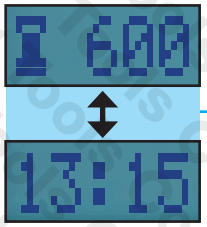
Display alternates between hold symbol & Time stamp of held data

CALIBRATION DUE WARNING MESSAGE



Display alternates between calibration due and current time

AIR PURGE "SNOOZE" TIMER



Display alternates air purge delay symbol & Current time

LOW BATTERY WARNING MESSAGE

Display alternates between BAT symbol & Current time

STATUS BAR ICONS

Icons give quick and simple status information:

STATUS BAR ICON LEVEL

ICON LIST

PUMP

Pump status indication
(Running/Stopped)

LOGGED DATA

Indicates the analyser
contains logged data

SENDING DATA

Indicates data is being transmitted
to either the App or the Printer

BATTERY

Battery Status indication

STATUS BAR MENU OPTIONS

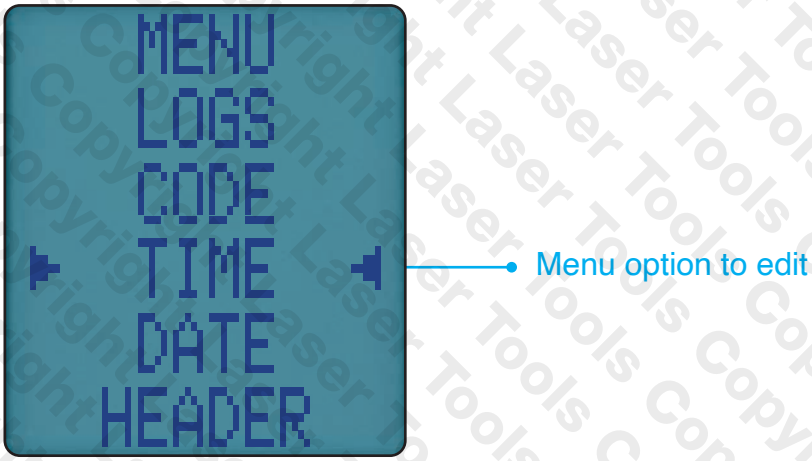
Status Bar offers you contextual menu items based on your screen display.

STANDARD OPTIONS

USING THE MENU

Rotate dial to MENU to customise your analyser default setting to your requirements.

Navigate through the MENU using these buttons ▲ & ▼ ↵



As you navigate up or down items will move up or down the screen returningto the beginning.

Note: To exit MENU turn your analyser rotary dial to any position - note any unsaved changes will be lost.

MENU ITEMS

MENU ITEM	MENU TEXT	OPTIONS/COMMENTS
TIME	**TIME**	HH:MM:SS format E.G. 7am = 07:00:00, 7pm = 19:00:00
DATE	**DATE**	DD/MM/YY format
HEADER	**HEADER**	Edit the 2 Line Header on your printouts.
PRINTER TYPE	**IR PRINT**	Select, KMIRP, IRP-3
LOGS	**LOGS**	View current memory usage & stored logs
LANGUAGE	**LANGUAGE**	Select required language from the list.
CODE	**CODE**	Password protected for authorised service agents only - Default to 000000

Laser LINK

This unique feature provides future connectivity to a selection of peripheral devices currently under development, which will link wirelessly to your analyser, and utilise its display functionality. Once connected, they will remain connected unless specifically dis-connected.

Keep in touch with Laser via www.lasertools.co.uk

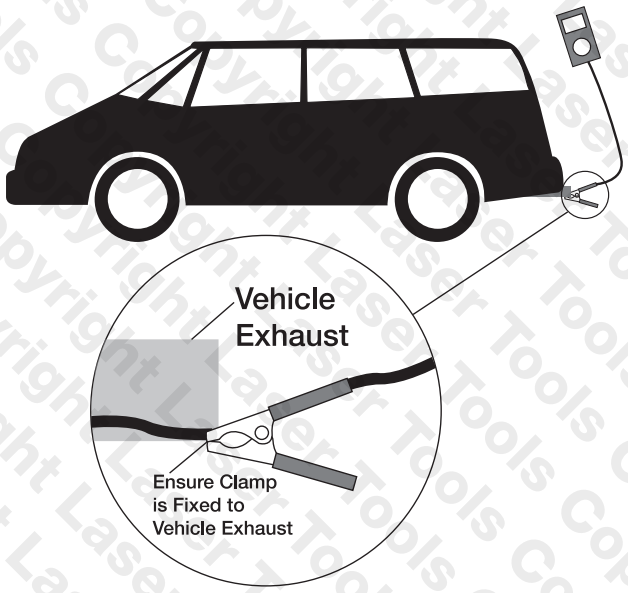
MEASURING EXHAUST GASES

After countdown is finished and your analyser is ready to use, put your exhaust probe into the vehicles exhaust.
For normal emission testing, ensure that the engine has been pre-conditioned to normal operating temperature. The engine conditions must be constant and stable to give a stable measurement.

Ensure the probe is fully inserted into the exhaust pipe to avoid any dilution of the exhaust gas with back-flushing ambient air. Position the hose assembly away from any hot surfaces.

SAFETY WARNING

Use suitable protection when disconnecting the probe, as it may be hot!



Do not exceed analyser operating specifications - In particular:

- Do not exceed analyser internal temperature operating range
- Do not put analyser on hot surfaces
- Do not exceed analyser water trap max levels
- Do not let analyser particle filter become dirty and blocked

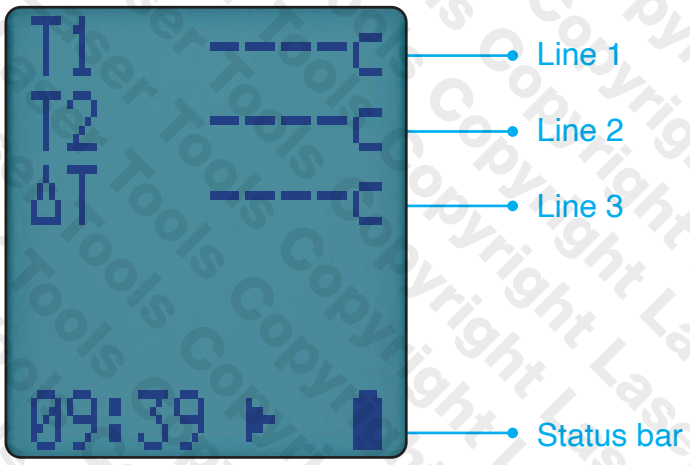
Check readings are stable and within expected range.

CO SENSOR PROTECTION PUMP OPERATION

Your analyser CO sensor is automatically protected from high levels of CO. When CO is above the maximum range of your analyser the main pump stops and CO Purge pump starts.

Your analyser displays - - - - until CO levels fall below the maximum measurement range.

AUX SCREEN



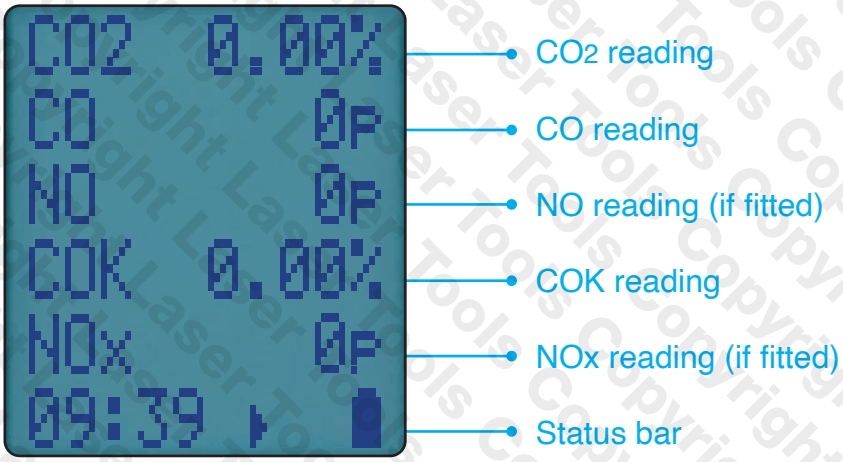
EDITING AUX SCREEN

You can customise lines 1 to 5 of your analyser AUX screen.

To edit a line, press ▲ ▼ until EDIT appears on the status bar. Press and hold ↵ to select EDIT.

Cursor flashes and line number appears in status bar. Use ▲ ▼ to select option to appear on line then press ↵ to enter option.

MEASURE SCREEN (Depending on sensors fitted)

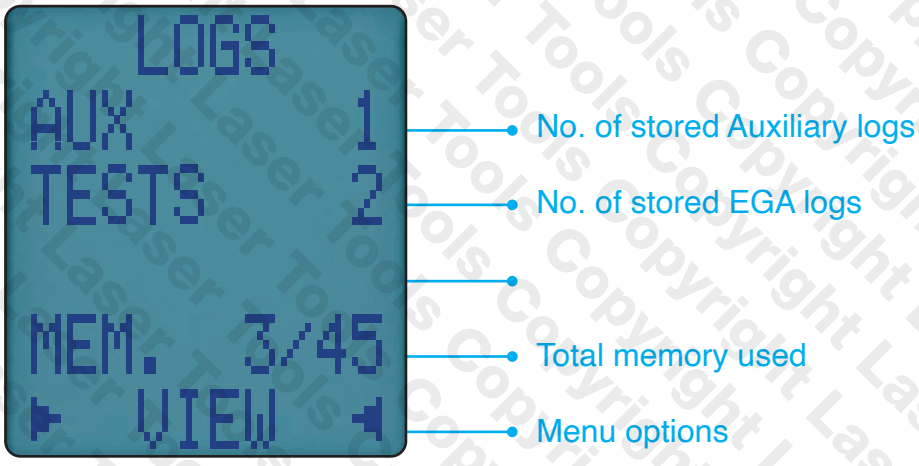


STORED MEMORY REPORTS

Your Laser EGA utilises a shared memory system which means stored logs are not limited by type.

An icon displays when your analyser has stored data.

To view current memory rotate dial to MENU then select LOGS to display.



MENU OPTIONS

View stored reports if available - enter sensory menu to select report type

Delete all sorted reports if available - to delete long press ↵ button

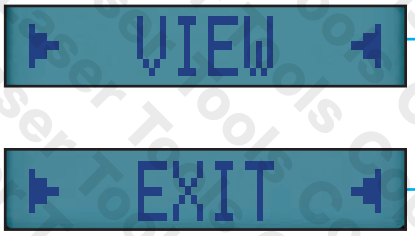
Return to main menu

VIEWING STORED REPORTS

To view your reports, select VIEW option from LOGS Menu:

List of available LOGS
To navigate and select use
▲ ▼ & ↵

REPORT VIEW MENU OPTIONS

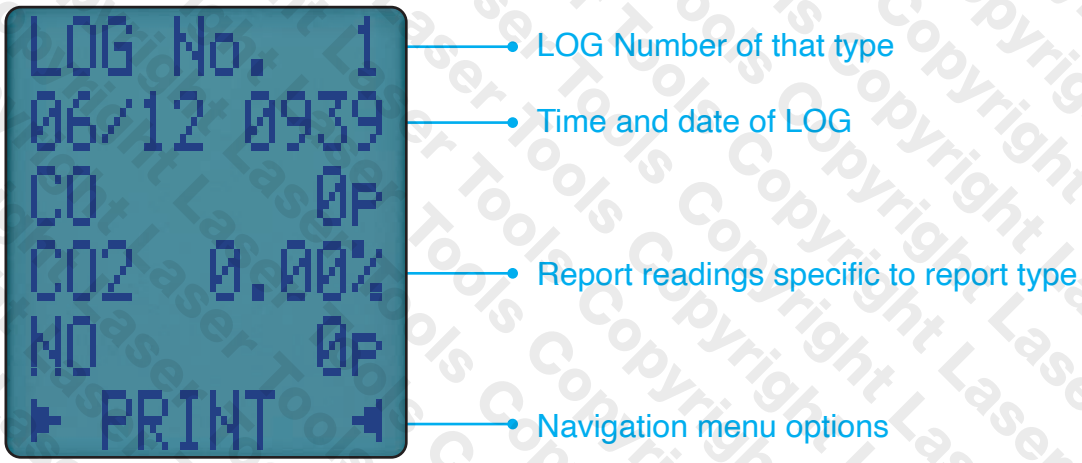


View stored Tests

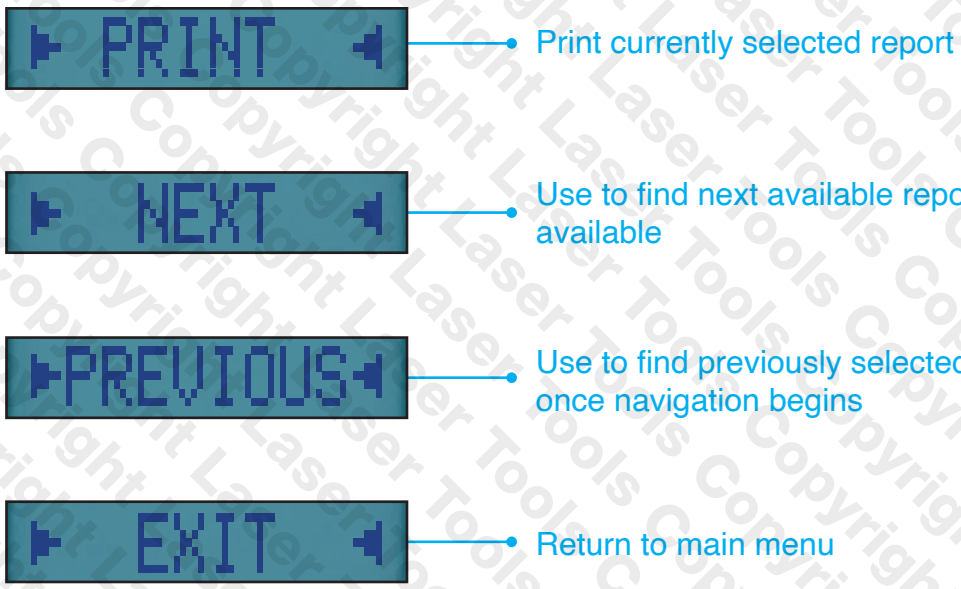
Returns to previous menu

FINDING STORED REPORTS

Once you select your report type the first stored log is displayed:



REPORT MENU OPTIONS

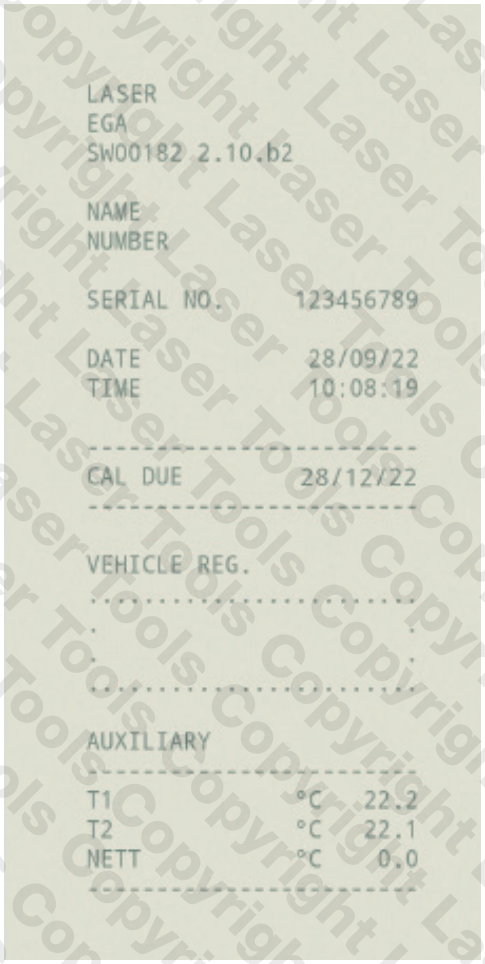


INFRARED PRINTER

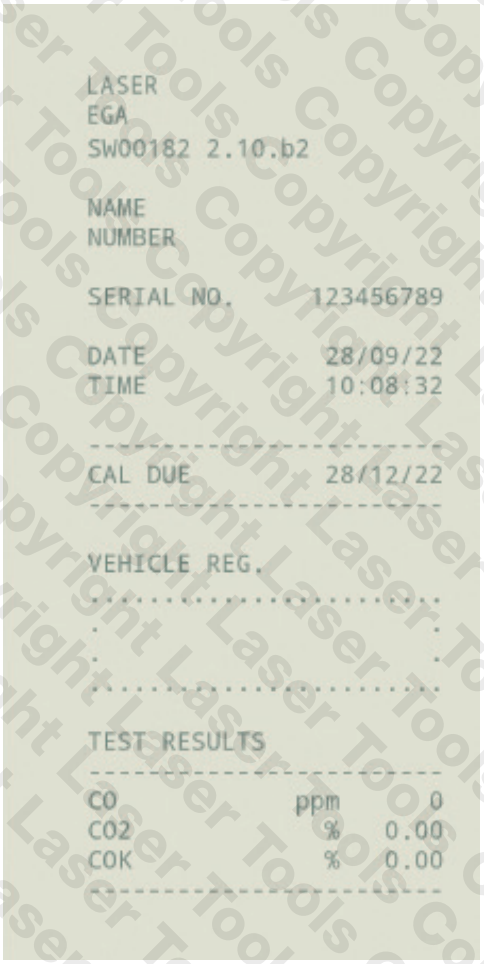
The Laser 8559 is compatible with Infra-Red printer IRP3, which is available as an optional extra
To use your printer, switch on and place the printer infrared receiver in line with the emitter on top of your analyser - allow a 15cm gap between analyser and printer. Press and hold button for 2 seconds to log a pressure and temperature report - See PRINTING to print stored reports.

PRINTOUTS

Aux



Tests



Laser LINK WIRELESS MEASUREMENT AND DATA TRANSFER – for use with future peripheral devices

You can wirelessly connect optional Laser LINK devices to your analyser.

Rotate dial to Laser LINK on your analyser to manage how your analyser communicates with wireless devices.

To ADD, REMOVE and check STATUS of optional Laser LINK devices (when available) select LINK using ▲ ▼ & ↵ buttons.

SPECIFICATIONS

PARAMETER	RANGE	RESOLUTION	ACCURACY
Temperature Measurement			
Inlet temperature (Internal Sensor)	0.50°C	0.1°C	±1°C
Exhaust Gas Measurement			
Carbon Monoxide	0 - 10,000ppm	1ppm	±5ppm < 100ppm ±20ppm < 400ppm ±5% > 400ppm - 2000ppm ±10% > 2000ppm–10,000ppm
Carbon Monoxide	0-10.0%	0.01%	±5% reading 0.1%-10.0%
Carbon Dioxide	0-20%	0.1%	±0.3% Volume
Nitric Oxide (if fitted)	0 - 600ppm	1ppm	±5ppm or ±5% of reading (whichever is greater)
Calculations			
Corrected Carbon Monoxide	0 - 21%	0.1%	±0.3% Volume
Pre-programmed Emissions			
Battery Life	>8 hours (continuous with pump on)		
Certification	Laser-EGA is independently tested and certified to EN50379, Parts 1-3		
Operating Conditions			
Temperatures	0 - 45°C		
Humidity	15 to 90% RH, (non-condensing)		
Power Supply	Rechargeable batteries, USB Charging		
Physical Characteristics			
Weight	Approx. 0.625g		
Dimensions	216mm x 105mm x 45mm		

TOOL CONNECTION

The Complete Connection

CERTIFICATE OF CONFORMITY

As the manufacturer/ importer/ distributor of our product;

8559
Digital CO meter

We confirm that the product has been tested and approved for conformance against the following directives / standard;

EU Directive	UK Directive	
EMC - 2014/30/EU	EMC Regulations 2016	EN50270:2015
RoHS – 2011/65/EU	RoHS 2012	IEC62321-1:2013; IEC62321-2:2013; IEC62321-3-1:2013; IEC62321-4:2013; IEC62321-5:2013; IEC62321-6:2015; IEC62321-7-1:2015; IEC62321-7-2:2017
LVD – 2014/35/EU	Electrical Equipment (Safety) Regulations 2016	EN61010-1:2010

SIGNED:
Mr Eddie Altham, Managing Director
DATE: 1ST DEC 2022

SERVICE - CALIBRATION - UPGRADES

Our International Service Partner for the Laser range of EGA's, is :

Kane International Ltd
Kane House, 11 Bessemer Road
Welwyn Garden City
Hertfordshire
AL7 1GF,
UK

t: 0800 059 0800
e: service@kane.co.uk

From outside UK Call +44 1707 375550

Laser recommends that all gas analysers & pressure meters should be serviced and calibrated annually.

Your Laser Gas Analyser comes as standard with a 12 month manufacturing warranty. You can extend your Laser analyser and pressure meter's 'no quibble' warranty, up to 10 years by returning your analyser & pressure meter via the Kane KAM dashboard annually. You should therefore, ensure you register your Laser Gas Analyser for annular service within the first 12 months of ownership. The following pages (pp27 – 30) describe the Kane KAM procedure for returning your Laser Gas Analyser securely.

Please register for this service by visiting our Laser Tools web-site, and follow the KAM service link on the 8559 Gas Analyser web-page.

All charges relating to Service, Calibration and Upgrades to your Laser EGA, will be handled directly via the KAM dashboard.

Your Laser Gas Analyser will be returned following Service, Calibration, or Upgrade, within 24 hours of it being received at the KAM Service Centre.

KANE ASSET MANAGER (KAM)

The fastest way to manage your analyser's recertification with FREE postage using www.kane.co.uk

KAM

Register your KANE analyser to create your KAM dashboard:

- ★ Simple online booking on www.kane.co.uk
- ★ Relevant product specific promotions, special offers & discounts
- ★ Automatic reminder when due for recertification
- ★ **FREE POSTAGE** returning your KANE analyser
- ★ **SAME DAY** annual FGA recertification **OR YOUR MONEY BACK***

*Excludes KANE '9 series' analysers & UKAS certificates

Use all 11 digits

1826800200
92

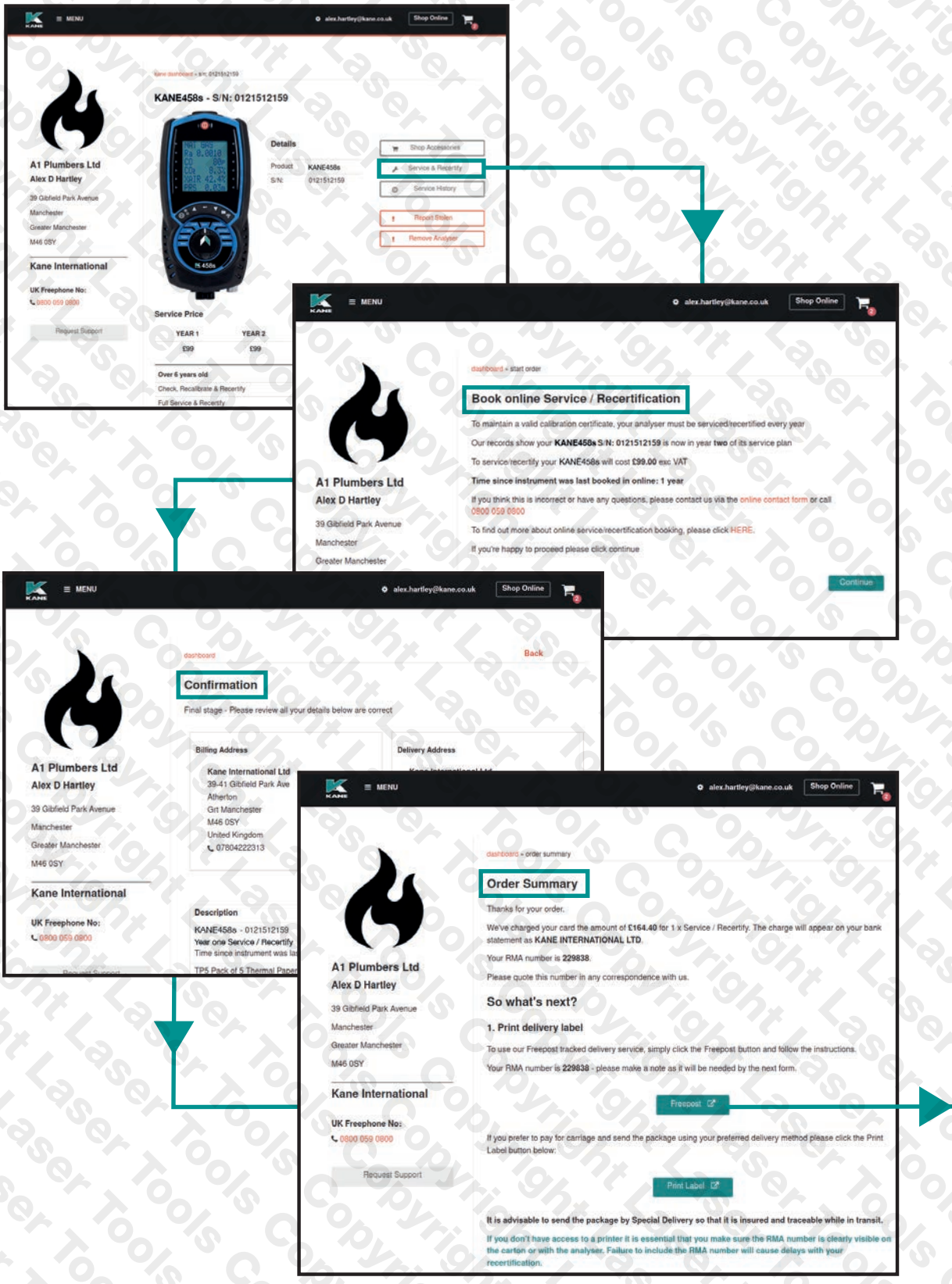
Please **register** your analyser at **www.kane.co.uk**
& download the full instruction manual from your KAM dashboard
PLEASE READ ALL SAFETY WARNINGS IN THE MANUAL

Use your KAM dashboard to:

- View - your Payment History / Company Details / Analyser Details / Service Pricing
- Buy KANE products, accessories, spares & consumables with FREE delivery
- Manage your KANE analyser's recertification online to receive same day turnaround
- Service History: Access, view & email electronic Calibration Certificates when required for compliance
- Report Stolen: Reporting your analyser stolen ensures our Stolen Analyser Register is up-dated & helps prevent industry colleagues unknowingly buying stolen goods
- Remove your KANE Analyser once sold so its new owner can also benefit

There are different KAM options & we'd be delighted to discuss your individual requirements
Contact: support@kane.co.uk

Your support - our way



GUARANTEED SAME DAY DESPATCH

Analyser Service & Recertification

Register your analyser on www.kane.co.uk

Book & pay to Service & Recertify via your KAM dashboard

Select FREEPOST for tracked carriage - UK mainland only

Your analyser will be despatched on the same day we receive it...

OR YOUR MONEY BACK*

WHERE TO SEND YOUR ANALYSER

Kane International Ltd
Kane House, 11 Bessemer Road
Welwyn Garden City
Hertfordshire
AL7 1GF,
UK

t: 0800 059 0800
e: sservice@kane.co.uk

From outside UK Call +44 1707 375550

COLD WEATHER PRECAUTIONS

It is important you keep your analyser in a warm place overnight.

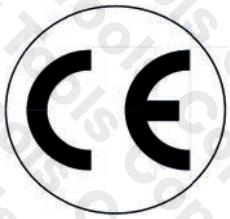
Electronic devices that become really cold, by being left in a vehicle overnight, suffer when taken into a warm room the next morning. Condensation may form affecting analyser performance.

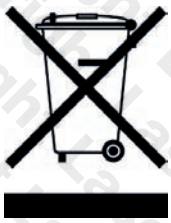
Analyser electrochemical sensors are affected by condensation or water being sucked into the analyser, stopping sensors seeing flue gas. When this happens, oxygen or carbon dioxide readings will display as “-” & sensors may be permanently damaged.

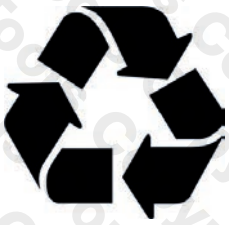
If you think your analyser is affected by condensation or water ingress, leave the analyser running in a warm place with pump ‘ON’ sampling fresh air for a few hours. Connect your mains adapter or battery charger to avoid draining batteries.

If you still experience problems please contact Kane Customer Service.

THIS PRODUCT CONFORMS WITH THE FOLLOWING







PLEASE RECYCLE

PACKAGING MADE IN THE UK

Thank you for buying this analyser.
Before use, please register on our website
www.lasertools.co.uk/product/8559

Or scan the QR code to go directly to
register your product online on the
KAM service dashboard

Tool Connection Ltd
Kineton Road
Southam
Warwickshire
CV47 0DR, UK
email:service@toolconnection.co.uk
KAM telephone: 0800 059 0800