

# 1.1 Gas Analyser KWQ-4/5M

## KWQ-4/5M Gas Analyser

KWQ-4/5M series is designed for use in auto repairs, safety checks and general engine tune-ups, which offers a measuring range that is strictly set to the suitable levels for such operation. It allows you to simultaneously measure concentrations of CO, HC, CO<sub>2</sub>, NO (Optional) and O<sub>2</sub> in engine emission in idle states. It can also measure the excess air ratio ( $\lambda$ ) of test engines. Light weight and compact enough, it can be fit at any work situation. Moreover, with a clear LCD and effortless operation, it can be used as a simple measurement instrument in other than the auto repair field.



- It has the double-idle test function specified by GB14621 in accordance with the accelerated simulation condition test function specified by the latest national standard GB 18285.
- It not only has the vehicle emission pollutant test function (double idle test, accelerated simulation condition test) in line with national standards, but also can be tested according to the user's specified working conditions.
- The instrument platform is made up of a complete set of imported components.
- With automatic zero calibration function, high degree of automation.

- The instrument interface is graphically designed, menu-driven, and more convenient to use.
- Reliable air pump and filter system design is not only small in size, but also avoids contamination of the sensor caused by long-term use.
- Communication with the PC via RS-232 serial port.
- The tail gas emission process can be detected under the idle and double idle processes in a single machine.
- Quick and easy to upgrade through the ISP download line.
- Built-in micro printer with direct printing.
- Meets the international standard ISO 3930 or OIML R99 Level 1 accuracy requirements.
- 800 sets of data storage and review functions.
- Automatic calculation and display of Air-Fuel Ratio (Lambda).
- Equipped with RPM and Oil Temperature measure interface.
- With function of License Plate Number input and time display.
- Can be integrated with control system and stand alone.



**Optional  
Trolley Stand**

# 1.1 Gas Analyser KWQ-4/5M

## Specifications:

Application : Gasoline, LPG, CNG Cars

Monitor Display : LCD

Communication : RS-232

Printer : Built-in Mini Printer

Sensor Principle :

CO, HC, CO<sub>2</sub> : Non-Dispersive InfraRed

O<sub>2</sub>, NO (Option.) : Electrochemical

Measurement Range :

CO : 0.00 – 15.00 % vol.

HC : 0 – 9999 ppm vol.

CO<sub>2</sub> : 0.00 – 18.00 % vol.

LAMBDA : 0.000 – 9.999

O<sub>2</sub> : 0.00 – 25.00 % vol.

NO (Option.) : 0 – 5000 ppm vol.

RPM : 0 – 9999 rpm

Oil Temp. : 0 – 150 °C

Resolution :

CO : 0.01 % vol.

HC : 1 ppm vol.

CO<sub>2</sub> : 0.01 % vol.

LAMBDA : 0.01

O<sub>2</sub> : 0.02 % vol.

NO (Option.) : 1 ppm vol.

RPM : 1 rpm

Oil Temp. : 1 °C

Sample Gas Flow Rate : Approx. 6 L/min.

Sample Gas Pressure : 0.0 – 1.0 kPa

Warm-Up Time : 15 min.

Respon Time :

CO, HC, CO<sub>2</sub> : 10 sec.

O<sub>2</sub> : 12 sec.

NO (Option.) : 10 sec.

Environment for Operation :

Temperature : 0 – 50 °C

Humidity : 85 %

Environment for Storage :

Temperature : -30 – 60 °C

Humidity : 90 %

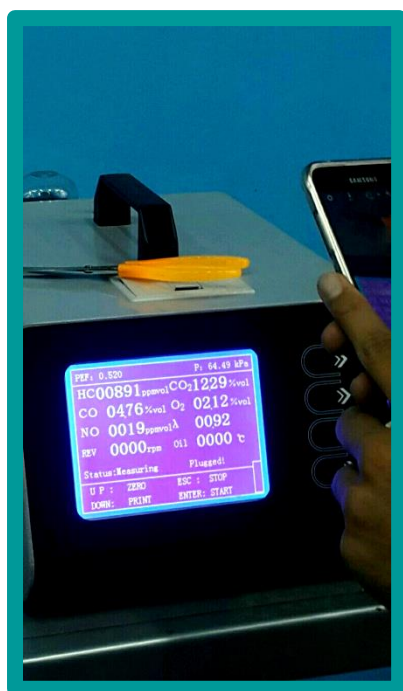
Power Supply : 220VAC ±10%, 50Hz ±2%

Weight : Approx. 8.5 kg

## Complete Set:

- Sample Tube and Probe
- Filters
- Printer Paper
- Power Cable
- User Manual
- Certificate Warranty
- Trolley Stand (Option.)

# 1.1 Gas Analyser KWQ-4/5M



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## 2.1 Opacimeter KYD-6M

### KYD-6M New Opacimeter

Also referred to as opacity meters, detect and measure the amount of light blocked in smoke emitted by diesel engines from cars, trucks, ships, buses, motorcycles and automotives operations.

The smoke meter readout displays the smoke density giving a measure of the efficiency of combustion. This makes the smoke meter an excellent diagnostic tool to ensure proper maintenance of diesel engines for improved fuel economy and protection of the environment.



- With real-time testing and free acceleration testing.
- With oil temperature, ambient temperature and humidity test function.
- Large-screen LCD display, clear font, graphical display, and friendly interface.
- Equipped with RS232 interface to communicate with external computers.
- Built-in mini printer.
- Optional tachometer to measure engine speed.
- Can be integrated with control system and stand alone.

- Take the style (split) measurement method. The "air curtain" protection technology, patented optical platform, the optical system is protected from smoke pollution and improve the stability of the instrument.
- The measurement room is controlled by constant temperature to prevent the measurement result from being inaccurate due to condensation of water and gas in the exhaust.
- The lower position machine adopts DC 24V low voltage power supply, which is more safe and prevents safety accidents. The upper and lower machine communication adopts 485 communication with stronger anti-interference ability.



Optional  
Trolley Stand



## 2.1 Opacimeter KYD-6M

### Specifications:

Monitor Display : LCD

Communication : RS-232

Printer : Built-in Mini Printer

Unit : Unit Control & Unit Measurement

Measuring Range :

Absorption Ratio (N) : 0 – 99.99 %

Light Absorption Coefficient (K) :

0 – 16.08 m-1

Rotating Speed : 300 – 6000 r/min

Oil Temperature : 0 – 200 °C

Flue Gas Temperature : 0 – 150 °C

Indication Error :

Absorption Ratio (N) : ± 2.0 %

Rotating Speed : ± 50 r/min

Oil Temperature : ± 5 °C

Flue Gas Temperature : ± 5 °C

Resolution :

Absorption Ratio (N) : 0.01 %

Light Absorption Coefficient (K) :

0.01 m-1

Rotating Speed : 1 r/min

Oil Temperature : 1 °C

Flue Gas Temperature : 1 °C

Ambient Temperature : 0 – 40 °C

Relative Humidity : ≤ 95 %

Power Supply : AC 220±22 V, 50±1 Hz

Power Consumption : 150 W

### Complete Set:

- Sample Tube and Probe
- Printer Paper
- Power Cable
- Connection Cable
- User Manual
- Certificate Warranty
- Trolley Stand (Option.)

## 2.1 Opacimeter KYD-6M



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# 9.1 Headlight Tester KSB-600M

## KSB-600M Headlight Tester Manual

Headlight Tester of Model KSB-600M with Printer type is used to cast light on the light distance light luminescence intensity , the light beam excursion amount before hand movement measures a motor vehicle; Light beam excursion measures close brightness waiting for the various parameter.

The technology that 21861, measures before GB18565 relevance according to light demands satisfied GB7258, GB, applies to all of the various levels motor vehicle detecting organization, the automobile keep the job, motor industry and lamp manufacturing industry in repair. The instrument is very suitable for use in vehicle inspection stations, repair and maintenance garage.



Headlight Tester for measuring motor vehicle headlamp low beam lamp luminous intensity and optical axis offset. Applicable to the motor vehicle repair shop, vehicle inspection stations, automobile factory for motor vehicle headlamps detection and adjustments.

### Features:

- Accurate inspection for high beam and low beam of automobiles, independent testing.
- Bright LCD screen, with professional Windows graphical operating system.
- "Arbitrary" 2D moving mechanism, multiple laser-assisted positioning system to ensure easy artificial lights physical center alignment operation.
- Standard RS232 communication port (optional) to computer, reliable network software.
- Blue-tooth wireless communication module, optional mini-printer a special design to convenient user's operation.
- Headlight Tester laser pointer.
- Suitable for manual adjustment and inspection of automotive headlight height.
- Suitable for use in various vehicle detecting organizations, vehicle inspection stations, automobile industry, repair and maintenance garages.
- Optional rechargeable battery module, adapt to a variety of work environments.
- Built-in mini printer.
- Can be integrated with control system and stand alone.

# 9.1 Headlight Tester KSB-600M

## Specification:

- Display : LCD
- Printer : Built-in mini printer
- Communication : RS-232
- Light Intensity : 0 – 120.000 cd
- Deviation of Optical Axis:
  - High Beam :
    - Vertical :
      - (Up) 350 mm/10 m
      - (Down) 525 mm/10 m
    - Horizontal :
      - (Left) 525 mm/10 m
      - (Right) 525 mm/10 m
  - Low Beam :
    - Vertical :
      - (Up) 350 mm/10 m
      - (Down) 525 mm/10 m
    - Horizontal :
      - (Left) 525 mm/10 m
      - (Right) 525 mm/10 m
- Inspection Distance : 50 cm
- Inspection High : 400 – 1400 mm
- Measurement Accuracy :
  - Luminous intensity :  $\pm 10\%$
  - Optical axis deviation :  $\pm 35\text{ mm}/10\text{ m}$
- Power Supply : AC220V  $\pm 10\%$ , 50Hz  $\pm 1\%$
- Weight : 40 Kg



**COSBER**  
Vehicle Inspection Equipments & System



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## WWSDRF

"WWSDRF": WIRELESS WHEEL WEIGHING PLATFORMS



Wireless platforms designed for creating static wheel and axle weighing stations, avoiding the hassle of connecting cables between the platforms and the indicator. Ideal for weighing large sized vehicles fitted with twinned wheels (articulated lorries, tractor-trailers, building yard vehicles, etc.); particularly accurate and sturdy, with attention to details.



## FEATURES

- Platform dimensions: 950x611mm. Height 59mm. Weight approximately 46kg.
- Loading surface: 950x500mm.
- Very handy.
- Sturdy structure, made in special aluminium, which guarantees lightness and makes these platforms suitable also for harsh working conditions.
- Stainless steel load cells.
- Overall IP68 protection.
- Sturdy built-in weight indicator, protected thanks to an IP68 hermetic box.
- Built-in radio module for weight transmission to a remote indicator or external device.
- Integrated wheels for easy transport and positioning.
- Power supply: internal rechargeable battery (about 40 h battery life), kept in hermetic box, and charger included.
- Special vulcanised nonslip rubber applied under the platform, for good grip on all types of surfaces.
- The WWS platforms are patented; the number is 1.342.302.
- Available in legal for trade approved version.
- Available in high resolution version.

## NOTES ON THE CE-M APPROVED VERSIONS

- The platforms are for legal for trade use:
  - In the single-platform systems, not used to weigh vehicles.
  - In the wheel weighing systems in which the number of platforms is equal to the number of vehicle wheels.
  - In the axle weighing systems composed of one or more multiples of WWS platforms, except possible limitations of use for some European States.
- The CE-M legal for trade divisions indicated in the "version" table are available with ECEM option. ECEM option is needed for each legal for trade platform of the system.
- Legal for trade systems with more than one WWS, are fitted with the approval of the weight sum and related division:

Example for a 4 platforms system:

Single CE-M Platform: Max=1500kg and e=0,5kg

CE-M SUM: Max=6000kg and e=2kg



## WWS-R: Additional on/off ramps

- Integrated folding ramps, useful to facilitate the boarding and the alighting of vehicles with small diameter wheels or moved with the engine off.



In the example, an application with 2 WWS-R ramps.

DETAIL 1



WIRELESS WEIGHING

WEIGHING  
OF THE  
ENTIRE  
VEHICLE  
up to 20  
Platforms



AXLE  
WEIGHING  
through 2  
Platforms



Example of application with wireless platforms and DFWKRPRF indicator for the reading and printing of the weight through a remote indicator.

VERSIONS

Available versions

Code	Surface l x w (mm)	Max (kg)	d (kg)	<b>M</b> (kg)	d* HR (kg)
WWSD6TRF-3	950x500	6000	2	2	0,2
WWSD10TRF-3	950x500	10000	5	5	0,5
WWSD15TRF-3	950x500	15000	5	5	0,5
<b>WWSD20TRF-3</b>	<b>950x500</b>	<b>20000</b>	<b>10</b>	<b>10</b>	<b>1</b>

(\*) These divisions are obtainable only with the relative options

# AUTOLIGHT™

### Why **AUTOLIGHT™**?

Window tinting can diminish driver vision through vehicle windows. This compromises the safety of driver and their passengers.

Safety is jeopardised when approaching vehicles with dark, non-regulatory approved window tinting. The internal space of the vehicle and its passenger's movements are not clearly visible.

### What is **AUTOLIGHT™**?

**AUTOLIGHT™** is a portable Light Transmission Meter. The meter measures the level of light transmitted through a tinted window to determine its safety level.

It is a lightweight, accurate and easy to operate tool for law enforcement officers. Some local regulations also require testing of tinted glass to ensure conformance, during vehicle safety inspections. The **AUTOLIGHT™** meter provides inspectors with accurate readings that would otherwise be impossible by simple visual inspection.

### How does **AUTOLIGHT™** work?

The light transmission meter consists of a light sensor built into the body of the instrument, a precision light source and a LCD display.

By aligning the light source and the sensor on either side of the window, the percentage of light transmitted through the window is measured. The degree of visibility is obtained from the reading.



# AUTOLIGHT™

Three easy testing steps with **AUTOLIGHT™**



**STEP 1**



**STEP 2**



**STEP 3**

**STEP 1:** Align **AUTOLIGHT™** to the side of the test window or windscreen so that the light source and light sensor overlap.

**STEP 2:** After aligning **AUTOLIGHT™**, press the measurement button to take a reading of the light transmitted through the window.

**STEP 3:** After the test is completed, the display shows the percentage of light transmitted through the window.

## Features

- Easy to operate by aligning two reader tubes
- Simple one button operation
- Can be used for side windows or windscreens
- Calculates the percentage of light transmitted through windows
- Lightweight (350g)
- Compact (190mm x 60mm)
- Automatic start function

## Specifications

### Monitoring

- Spectral sensitivity conforming to photopic curve V ( $\lambda$ ) of relative illuminous efficiency of the CIE 1931 standard observer for photopic vision
- Compliant with ISO 3538:1997

### Output

- 2856°K  $\pm$  50°K, conforming to CIE illuminant A
- Lamp voltage stabilised within  $\pm 0.1\%$
- Display: LED readout 0 - 100%, linear from 20 - 100%,  $\pm 3\%$

### Power Source

- 2 x MN 1604 batteries (9 volt)



# METERAN LASER DIGITAL

**PRAYA** tech



**BLACK COLOR LED BACKLIGHT**  
**NYAMAN DIMATA - HEMAT BATERAI**

- |                         |                             |
|-------------------------|-----------------------------|
| ✓ DUAL BUBBLE LEVEL     | ✓ UNIT METER/FEET/INCH      |
| ✓ SINGLE MEASUREMENT    | ✓ 20 GROUP DATA RECORD      |
| ✓ CONTINUES MEASUREMENT |                             |
| ✓ AREA                  | ✓ ACCURACY $\pm 2\text{MM}$ |
| ✓ VOLUME                | ✓ SERTIFICATION CE & ISO    |
| ✓ PYTHAGOREAS           | ✓ RESOLUTION 1MM            |
| ✓ PLUS AND MINUS        | ✓ LASER CLASS II            |
| ✓ SCAN ( MAX/MIN )      | 620-690nm, <1mw             |

**S series**



**HDCP00101**

# Digital Tread Depth Gauge



Range : 0-25.4mm  
Reading : 0.01mm  
Battery 3V

Metric/inch system conversion at any position