Bosch emission analysis for a **clean** environment – BEA 150/250/350

BOSCH
Invented for life

Bosch Diagnostics

| ESI[tronic] Software | Test Equipment | Service Training | Technical Hotline |

New challenges for the workshop

Environmentally-friendly products are favored by an increasing number of customers. The joy of individual mobility only has a future if cars become cleaner, more economical and safer. Test methods and measurement technology must adapt to this development. System developers such as Bosch have already incorporated these objectives in their development program.

Falling emission values of modern diesel and gasoline engines result in increasing demands on test instrument technology in the workshop.

BEA – **modular** emissions testing system

A clean job in the shortest of time

Testing and minimizing pollutant emissions with modular measurement technology – in accordance with the latest legislation and with high measurement accuracy. The workshop requires robust, future-orientated technology to achieve this, with clear operator guidance and simple handling. The new emission analysis instruments BEA from Bosch test technology excel through their easy and time-saving handling. Other particularly important aspects in the daily handling of exhaust-gas measuring instruments are the quick run-up times and short measuring periods.

BEA 150 – for emissions testing on diesel engine vehicles (car, van)

The handy, portable smoke opacity meter module RTM 430 is attached in a space saving way to the rear of the vehicle. It is distinguished by:
• Very fast measurement (response time)
• High service life of measuring chamber
• Quick, easy maintenance via magnetic locks
• Optimum flow technology of smoke opacity module – designed with the latest simulation programs
• Can be upgraded with exhaust gas module to complete emissions testing station (BEA 350)
• OBD function

BEA 250 – for emissions testing on petrol engine vehicles

The five component emissions tester is distinguished by:
• OBD function
• High test accuracy in accordance with OIML R 99 class 0
• Calibration only once a year
• Quick maintenance: filter easily accessible on rear of equipment
• Long-term stability due to infrared measurement method with gas detectors as receivers
• Upgrade option of NO test cells
• With smoke opacity meter module RTM 430 can be upgraded to complete emissions testing station (BEA 350)
• Quick measurement readiness on activation

BEA 350 – for emissions testing on diesel and petrol engine vehicles

Complete emissions testing station, cost effective combination from BEA 150 and BEA 250

Bosch emission analysis BEA
at a glance

① IR remote control

② Control and display unit with petrol emissions module (BEA 250/350)

③ Disk drive and printer

④ PC keyboard

⑤ Smoke opacity meter module RTM 430 (BEA 150/350)

⑥ Trolley

⑦ Sensor holder

⑧ Color TFT display and operating buttons

- Bright color TFT display – good visibility even from different angles and poor lighting conditions
- Bosch user guidance, clever and simple. The most important data is shown clearly: e.g. measured values by means of bar charts
- Simple operation using just a few keys on the unit. Alternatively, BEA can also be controlled via a PC keyboard or infrared remote control
- Documentation of all measured values via integrated protocol printer. Alternatively, a DIN A4 printer can also be connected
- Specified/actual value comparison using vehicle database
- Integrated OBD function – from OBD socket oil temperature, speed, fault code and probe voltage, for example, can be read
- Bosch speed measurement technology via B+/B− included with items supplied
- Speed measurement technology for petrol and diesel vehicles (trigger clamp, term.1/15; TN/TD/EST; TDC; optic reference point sender; terminal sender; B+/B−)
- Additional test functions: lambda probe voltage, start of delivery, crankshaft angle
- Integrated disk drive for quick program and data updates (can be carried out by user)

Practice-orientated and well **thought-out**

Bright color TFT display

Ergonomically designed sensor holder

Innovative Bosch speed measurement technology

Quick protocol print-out (< 5 sec.) and simple update per disk

Quick service thanks to easily accessible filter on rear of equipment

OBD connector with connection lead

The Bosch emissions analysis BEA units can be networked together

Performance test

Wheel alignment check

Engine test and electronics examination

Receipt and inspection system (rolling road)

Light test

Information

Emissions check

Data storage

Control unit diagnostics

Job receipt (EDP system)

Brake test

Emissions test

BEA 150/250/350 – **Facts** and **figures**

Equipment supplied

Bosch Emissions Analysis	BEA 150	BEA 250	BEA 350
Suitable for emissions testing on	diesel engines	gasoline engines	diesel/gasoline engines
Operating and display unit	✔	✔	✔
PC keyboard	✔	✔	✔
Trolley	✔	✔	✔
Software sequence (country-specific)	✔	✔	✔
Vehicle database	✔	✔	✔
Connection cable B+/B−	✔	✔	✔
Oil temperature sensor, cars	✔	✔	✔
Smoke opacity meter module RTM 430, with car hose and probe	✔	---	✔
Exhaust measurement module BEA 050, including hose and sensor	---	✔	✔
IR remote control	✔	---	✔

Special accessory

Vehicle emissions data, sensor holder, NO retrofit kit, printer paper for installed printer, DIN A4 printer, tool tray, remote control, sampling probes and sampling hoses, diesel terminal sender, adapter and connection leads, trigger clamp, stroboscope, oil temperature sensor, upgrade from BEA 150/250 to BEA 350 and OBD upgrade, KTS 115 OBD module

Specifications and standards

International:	OIML-R99 Class 0
EC:	CE Conformity
National (D):	EGE guideline dated 23 June 1994 PTB appendix 18.9 for diesel, 18.10 for gasoline

Order number

BEA 350	0 684 105 350**)
BEA 250	0 684 105 250**)
BEA 150	0 684 105 150**)

**) German version

Technical data

Dimensions	For all BEA variants with trolley (W x H x D in mm) 750 x 1370 x 700 Control and display unit (W x H x D in mm) 470 x 260 x 480
Weight	BEA 350 (incl. trolley) approx. 67 kg BEA 250 (incl. trolley) approx. 60 kg BEA 150 (incl. trolley) approx. 63 kg RTM 430 approx. 7 kg
Protection classes	Operating and display unit IP 30 Smoke opacity measuring module RTM 430 IP 33
Accuracy range	+5 °C − +40 °C
Functional range	+5 °C − +45 °C
Storage temperature	-25 °C − +60 °C
Power supply	230 V, 50 Hz

Measurement ranges, accuracy

Exhaust measurement module

Component	Measurement range	Resolution
CO	0.000 – 10.00 % vol	0.001 % vol
CO_2	0.00 – 18.00 % vol	0.01 % vol
HC	0 – 9999 ppm vol	1 ppm vol
O_2	0.00 – 22.00 % vol	0.01 % vol
λ	0.500 – 9.999	0.001
NO	0 – 5000 ppm vol	< = 1 ppm vol

Smoke opacity meter module

Measured quantity	Measurement range	Resolution
Degree of opacity	0 – 100 %	0.1%

Oil temperature

Measured quantity	Measurement range	Resolution
Temperature	-20 – +150 °C	0.16 °C

Speed, gasoline engine

Measured quantity	Measurement range	Resolution
BDM (B+/B−)	600 – 6000 rpm	10 rpm
Terminal 1/TD/TN/EST	100 – 15000 rpm	10 rpm
Trigger clamp	100 – 15000 rpm	10 rpm

Speed, diesel engine

Measured quantity	Measurement range	Resolution
BDM (B+/B−)	600 – 6000 rpm	10 rpm
Clamp-on sensor	250 – 7200 rpm	10 rpm

Multi-measurements

Measured quantity	Measurement range	Resolution
Lambda-sensor voltage	± 5 V	10 mV

Moment/adjustment of ignition

Measured quantity	Measurement range	Resolution
OT Reference mark sensor against trigger clamp	-179 – 180° kW at 100 – 8000 rpm	0.1° kW

Closing angle

Measured quantity	Measurement range	Resolution
Terminal 1	0 – 100 %	0.1%
	0 – 360° VW	0.1 °

Start of delivery/injection timing

Measured quantity	Measurement range	Resolution
Clamp-on sensor against OT or strobe	-179 – 180° kW	0.1° kW

Our **knowledge**, your **success**.
Bosch Diagnostics

Diagnostics – the key to the automotive workshop of the future. Motor vehicle systems are becoming increasingly complex; the demands placed on qualified diagnosis in workshops are rising. For professional service on modern vehicles, Bosch provides everything at one stop, perfectly coordinated: testing technology, software, technical training and hotline, supplemented by parts in initial equipment quality.

ESI[tronic] – Software for diagnostics and service
- Simple operation
- Rapid access
- Modular structure
- Comprehensive market coverage
- Continually updated
- Universal operation regardless of manufacturer

Test technology – matched to each workshop type
- Optimized combination of hardware and software for rapid troubleshooting, qualified repair and high time savings
- PC-based, testing technology of the latest generation with extendable modules

Service training – knowledge as a factor for success
- Comprehensive training program for automotive workshops
- Practical training courses
- Highly qualified trainers with a great deal of practical experience

Technical hotline – support from the system developer
- Support in difficult technical situations
- Skills covering all brands and manufacturers

Bosch – **skilled partner**
for workshop business

**Developments from Bosch stand for
innovative progress in automobile manufacturing**
Geared to the growing proportion of electronics in the vehicle, Bosch offers
workshops the suitable test technology for all sizes of company and service
concepts. Sturdy, innovative, state-of-the-art automobile technology:
computer-assisted diagnosis systems help in finding any fault more quickly
and more reliably. The modular layout – using future-oriented technologies –
enables broad networking and efficient use of comprehensive information
from the ESI[tronic] software. Mobility and user-friendly user guidance
support the workshop in reliable and timesaving diagnosis.

Where to find Original Bosch Quality:

ECU Diagnostics KTS

Engine System Testing FSA

Emissions Analysis BEA

Diesel System Testing EPS

Battery Service BAT

Brake Testing BSA

Wheel Alignment FWA

Air Conditioning Service ACS

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