



behr instrumental analyzers of the series C 50 HT, S 50 and CS 50 are ideally suited to the rapid, exacting and reliable analyses of carbon and sulfur, both at low ppm and high percent concentrations.

New NDIR detectors with an extremely low noise level and ASC (Automatic Sensitivity Control) and a broad analytical range enable nearly all analytical requirements to be met using a single detector. For extreme breadth of analytical range, range may be expanded by the inclusion of up to three detectors (2 C + 1 S or 1 C + 2 S).

The list of potential applications for the C 50 HT, S 50 and CS 50 series of analyzers is long. They are suitable for the determination of carbon and sulfur in:

- Steel and non-ferrous metals
- Alloys
- Carbides
- Ceramics
- Cement
- Minerals
- Coal
- Coke
- Oil
- Ash
- Catalysts
- Carbonates
- Soil
- Sediments
- Gypsum
- Plastics
- Waste
- Sand
- Glass, etc.

Separate modular housings for the detectors, the furnace control and the high temperature furnace provide optimal temperature control and user convenience in the laboratory. The detector housing module can be positioned at will with respect to the furnace and PC, which saves space on the lab bench, and also guarantees safe and tireless use.



behr CS 50:

Carbon and Sulfur Analyzer with NDIR Detection

behr NDIR Detectors:

- Broad analytical range: One detector will suffice for nearly all sample types and concentrations within a given sample type.
- Peltier-cooled sensor provides optimal sensitivity and minimal noise.
- Temperature-controlled IR-source
- Single-beam system with direct determination of beam intensity, no gas-filled comparison cell.
- Linear over the entire analytical range; the results are independent of sample weight and temporal course of the combustion process.
- ASC (Automatic Sensitivity Control) automatically adjusts the gain (for example, to compensate for contamination deposits in the optical path).
- Cross-sensitivity to chemical interferences are eliminated by an optical interference filter, which is built into the sensor.
- Display and service menu enable rapid examination of instrument operating parameters.
- Display of error notices and of instrument parameters simplifies error diagnosis and service.





Windows Software

- Storage of all relevant analysis data such as analysis finding, calibration data, sample weight and sensor-response vs. time curve.
- N-point calibration includes automatic linearity check, computation and display of confidence interval and graphic display
- Linearization algorithm
- Stand-by function stops oxygen consumption during pauses.
- Data transfer to other Windows programs using "drag and drop."



Control of the Analyzer

- Performed by means of a conventional PC having 2 serial ports.
- No computer hardware is integral to the analyzer.
- Service is simplified by easy replacement of modular components.
- Automatic transfer of sample weight from balance to computer.

Overview of Additional Advantages of the behr C 50 HT, S 50 and CS 50 Analyzer Family

User-friendly:

- System is ready for operation soon after it is switched on.
- Long-term stability and linearity over the entire analytical range obviate need for frequent re-calibration.
- Each detector is contained in a separate plug-in module. If one detector module is removed, the remaining detector modules remain functional for analyses.

Service-friendly:

- Detector plug-in modules are interchangeable. The combustion tube can be replaced and the new tube made operational without any tools.
- Error messages and a display of the operating status and control parameters directly on each detector simplify diagnosis of problems.

Cost-effective:

- Broad analytical range frequently obviates the need for additional detectors.
- Low operating costs resulting from economical replacement parts and consumables.
- Infrequent and simple maintenance requirements.

Technical Data:

Analytical principle:	High temperature combustion with subsequent quantification of resulting CO ₂ and SO ₂ by NDIR		
Detectors:	NDIR detectors with microprocessor control and solid-state technology		
Analytical ranges:	Carbon:	0,001 % (10 ppm) – 100 %	
	Sulfur:	0,001 % (10 ppm) – 10 %	
	Depends on sample material, weight and type of detector		
Accuracy:	< 0,01 %:	better than 2 %	
	> 0,01 %:	better than 1,5 %	
Analysis time:	60 – 120 seconds, depending on sample material and weight		
Furnace:	High temperature resistance furnace with oxygen pre-purification as an available option		
	Maximum temperature:	1550 °C	
	Operating temperature:	1400 °C	
	Oxygen consumption:	CS and S analyzer:	3 l/min
		C analyzer:	1 l/min
Oxygen purity:	Near detection limit:	99,995 %	
	otherwise:	99,6 % (technical grade oxygen)	
Power consumption:	230 VAC, 50/60 Hz, max. 2 kW		