

## Composition: Optical Spectrometry

Do I know the gas composition? > Composition: Optical Spectrometry

### Summary

An optical spectrometer is a laboratory instrument used to analyse a gas sample to determine its composition.

### How it Works

An optical spectrometer (spectrophotometer, spectrograph, or spectroscope) is an instrument used to measure properties of light over a specific portion of the electromagnetic spectrum, typically used in spectroscopic analysis to identify materials and chemicals.

By measuring the amount of light absorbed or reflected by a sample of an unknown substance it is possible to determine what it is made of and how much of each of its constituent materials it contains.

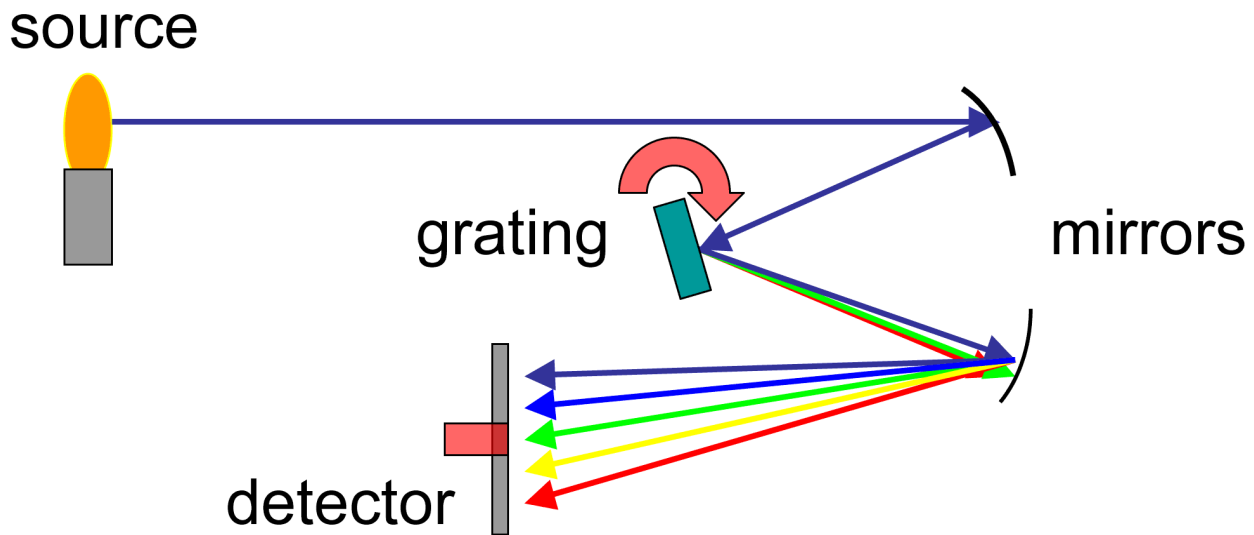


Figure 1: Schematic of optical spectrometer. (Source: [Wikimedia Commons](#). Full credit to Wikipedia User: Kkmurray. This file is licensed under the [Creative Commons Attribution-Share Alike 3.0 Unported](#) license. No changes have been made to the original file.)

Optical Spectrometers are not widely used in the Oil and Gas Industry.

#### Advantages

- ✓ • High accuracy
- ✓ • Low uncertainty

#### Limitations

- ✗ • Mainly a laboratory based method.
- ✗ • Equipment costs

#### Go Deeper

- [ArunTechnology](#)
- [Agilent](#)

Case study

No case study available at this time.

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## Do I know the gas composition?



Composition: Spectrometry (GC – MS)



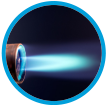
Composition: On-Line



Composition: Laboratory Analysis



Composition: Specific Gravity Analyser (Relative Density)



Composition: Wobbe Index Analyser (Calorimeter)