

# Metal analyzer

Analyzing metal at the speed of light

**Vecom is innovating and is now able to analyze the chemical composition of metals with a metal analyzer in two seconds. The type of metal can be determined on the basis of this composition.**

## Applications of the metal analyzer

When material is brought to us for a chemical treatment, we can now provide an analysis quickly and accurately. This is important for choosing the right metal treatment.

Vecom can also offer this solution for cleaning on site with this handy device. An analysis of the metal of the installation to be cleaned can now easily be made and within a few seconds the chemical composition and thus the metal type can be determined. The pollution of the installation can be analyzed by our in-house laboratory. Both analysis help to optimize the choice of the right chemical treatment for your installation.

When in doubt about metal types supplied or in a mix up of different types of metal in the stock, Vecom can provide a solution with the metal analyzer.

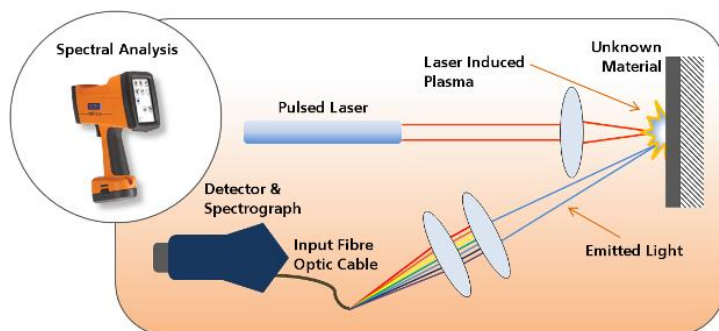
Within seconds an analysis has been carried out and the material is known.

By using the metal analyzer in our chemical cleaning procedures, Vecom is able to further optimize and safeguard the quality of our treatments.



## How does the metal analyzer work

The metal Analyzer is an alloy analyzer. The device works via the Laser Induced Breakdown Spectroscopy (LIBS) technology. LIBS is an atomic emission technique, which uses the difference in refraction of the light from the various elements that are present in an alloy.



### Atomic state

Each laser pulse touches the surface of the unknown metal, of which a small amount is consumed (small scratch). A plasma is formed on the surface. The plasma contains free electrons, excited atoms and ions. When the plasma cools, the electrons of the atoms and ions at the excited states will drop back to the ground state. Light is emitted. Each present element emits light with its own distinctive wavelength. This characteristic light per element is measured and thus the chemical composition of the metal can be determined and displayed in the screen of the analyzer. Based on the chemical composition, the metal type is determined from the database. The device is connected via WIFI to our computer systems, enabling the test results to be displayed and stored in a report.



The device measures:

- Sheet steel
- Wire steel
- Piping
- Couplings
- Etc.

### Effect on the metal

The metal is hit by pulses about a thousand times per analysis. It is a (almost) non-destructive technique. A microscopic amount of material is consumed of  $\pm 1$  micrograms (2mm). The burn is very low.

### No radioactive radiation

By using this technology, no radioactive radiation source (X-ray) is needed anymore to obtain a measurement. This makes this metal analyzer much safer and easier to use than XRF meters.



ANALYZE  
2018-09-04 14:06:16  
**Incoloy 840**



Element	%	MIN	MAX
Fe	56.46	52.84	64.81
Ni	18.84	18.00	22.00
Cr	14.94	18.00	22.00
Mo	6.72	N/A	N/A
Co	1.38	N/A	N/A
Cu	0.90	0.00	0.75
Mn	0.37	0.00	1.00
Nb	0.23	N/A	N/A
Si	0.08	0.00	1.00
Al	0.05	0.00	6.00
V	0.03	N/A	N/A
Ti	0.00	0.00	0.60

### Interested and want to know more?

For further information and/or questions about this subject or in case you have other questions, please contact one of our specialists via +31 10 59 30 258 or go to our website.