

# Thickness Gauges for the Steel Industry



**ITG/XTG-2000**

# Our product line

Permeability, magnetic index, FeO content

Isotope and X-Ray thickness gauges

Coating weight gauges, closed-loop control

Flatness gauges: cold and hot rolling mills

Roughness measurement

On-line control of working rolls

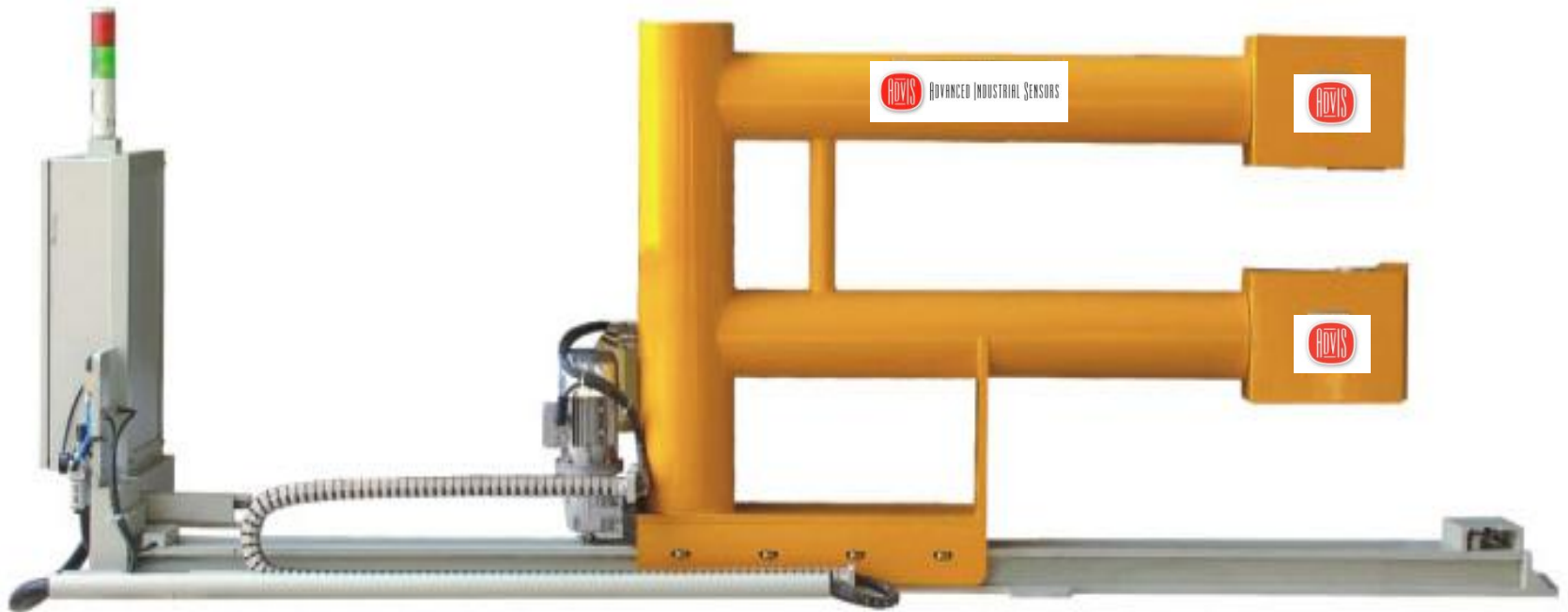
Billet surface defects detection and characterization

Thermal mapping of hot products (slab, billet, strip,...)

Dedicated control systems

# Gauges for Rolling Mills

Isotope or X-Ray

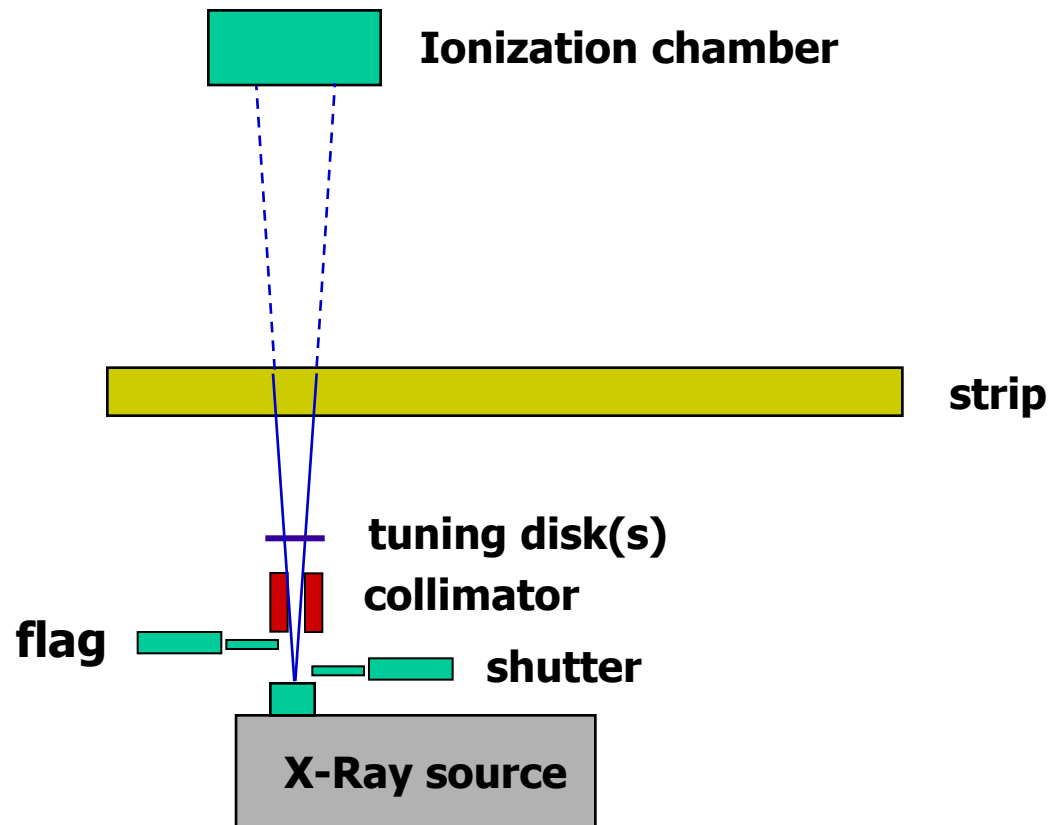


X-Ray energy emitted by the source is partially absorbed by the strip to be measured.

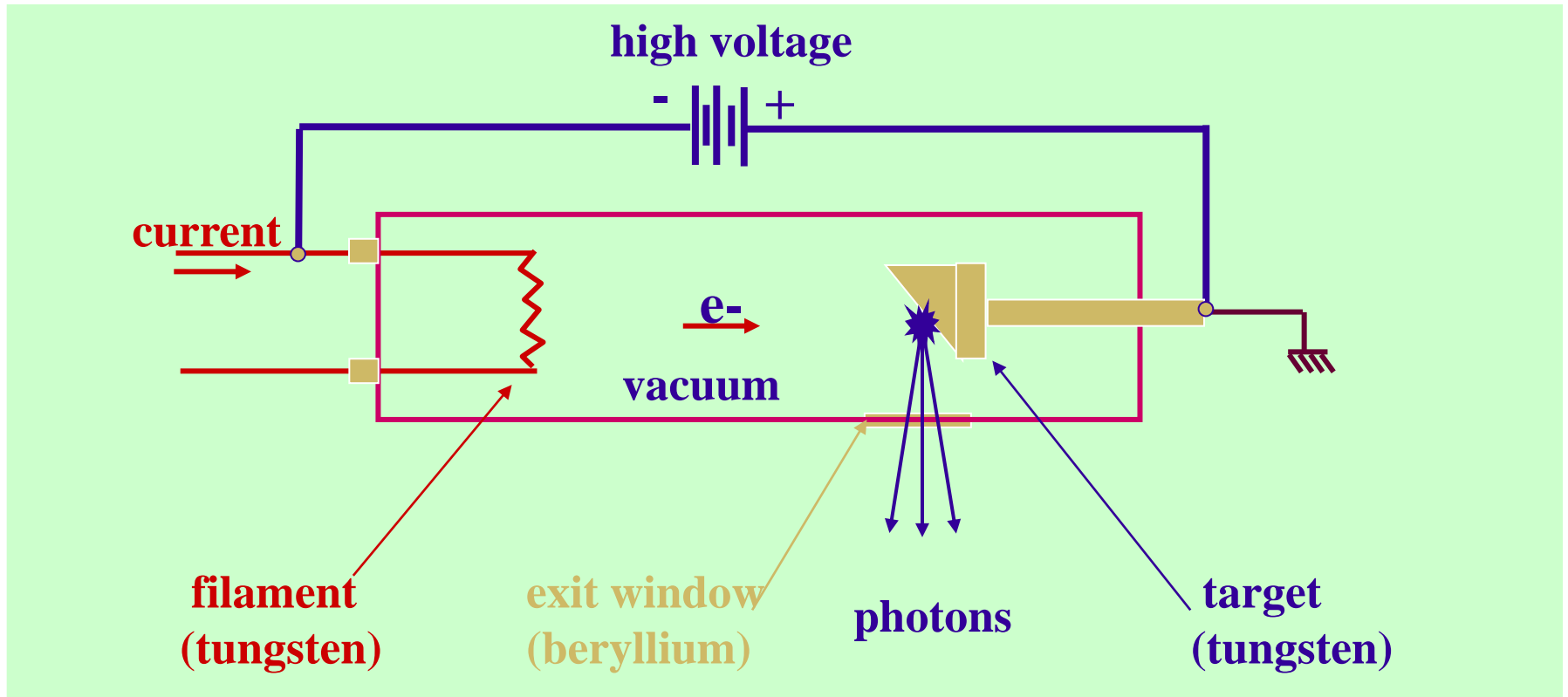
Signal attenuation is calibrated with reference samples

Source high voltage and ionization chamber are adapted to the application

Tuning disk(s) optimizes signal noise in the measuring range



# X-Ray tube : Principle

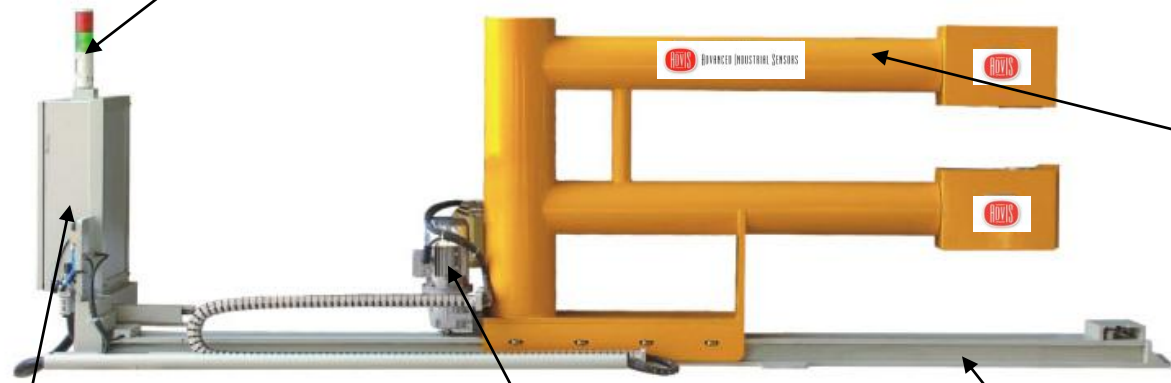


# Source Range

|                                 | <b>Application</b>                     |
|---------------------------------|----------------------------------------|
| <b>GTG-1000 : isotope 1 Ci</b>  | <b>Entry of CGL, inspection lines</b>  |
| <b>GTG-3000 : isotope 3 Ci</b>  | <b>Entry of CGL, inspection lines</b>  |
| <b>XTG-3000 : X-Ray 30 kV</b>   | <b>Aluminium foil mills</b>            |
| <b>XTG-4000 : X-Ray 40 kV</b>   | <b>Aluminium mills: extended range</b> |
| <b>XTG-6000 : X-Ray 60 kV</b>   | <b>Steel CRM: up to 4 mm</b>           |
| <b>XTG-8000 : X-Ray 80 kV</b>   | <b>Steel CRM: up to 6 mm</b>           |
| <b>XTG-12000 : X-Ray 120 kV</b> | <b>Steel CRM: above 7 mm</b>           |

# C-Frame

Warning lamps



C-frame

- rugged construction
- Customized to application
- pressurized

Front-end electronics

Drive system

- pneumatic
- hydraulic
- electrical

Guiding track

# Drive System

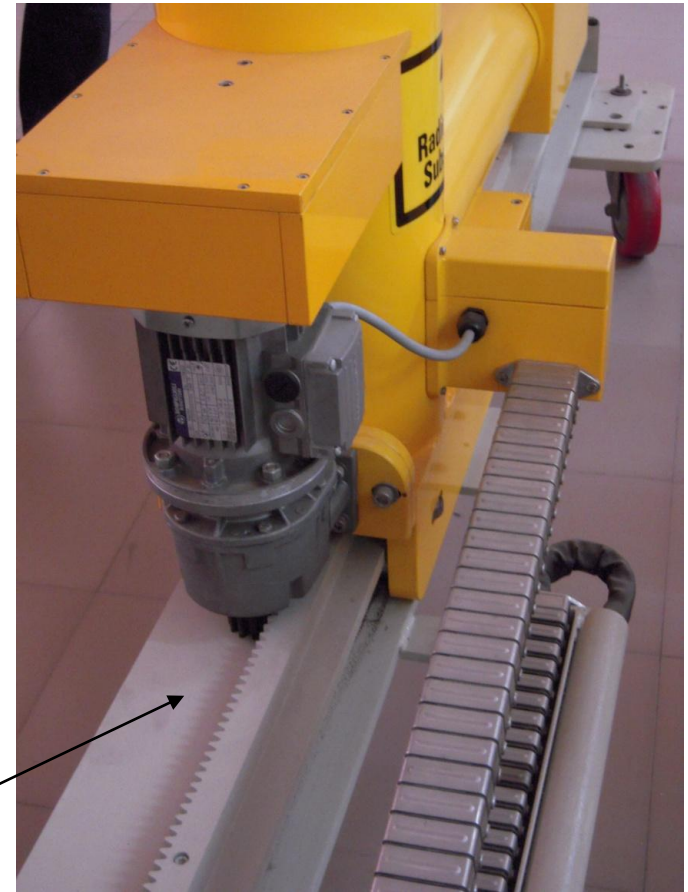
Electrical

Cable drag chain



Pneumatic

Rack & pinion



# Chiller Unit

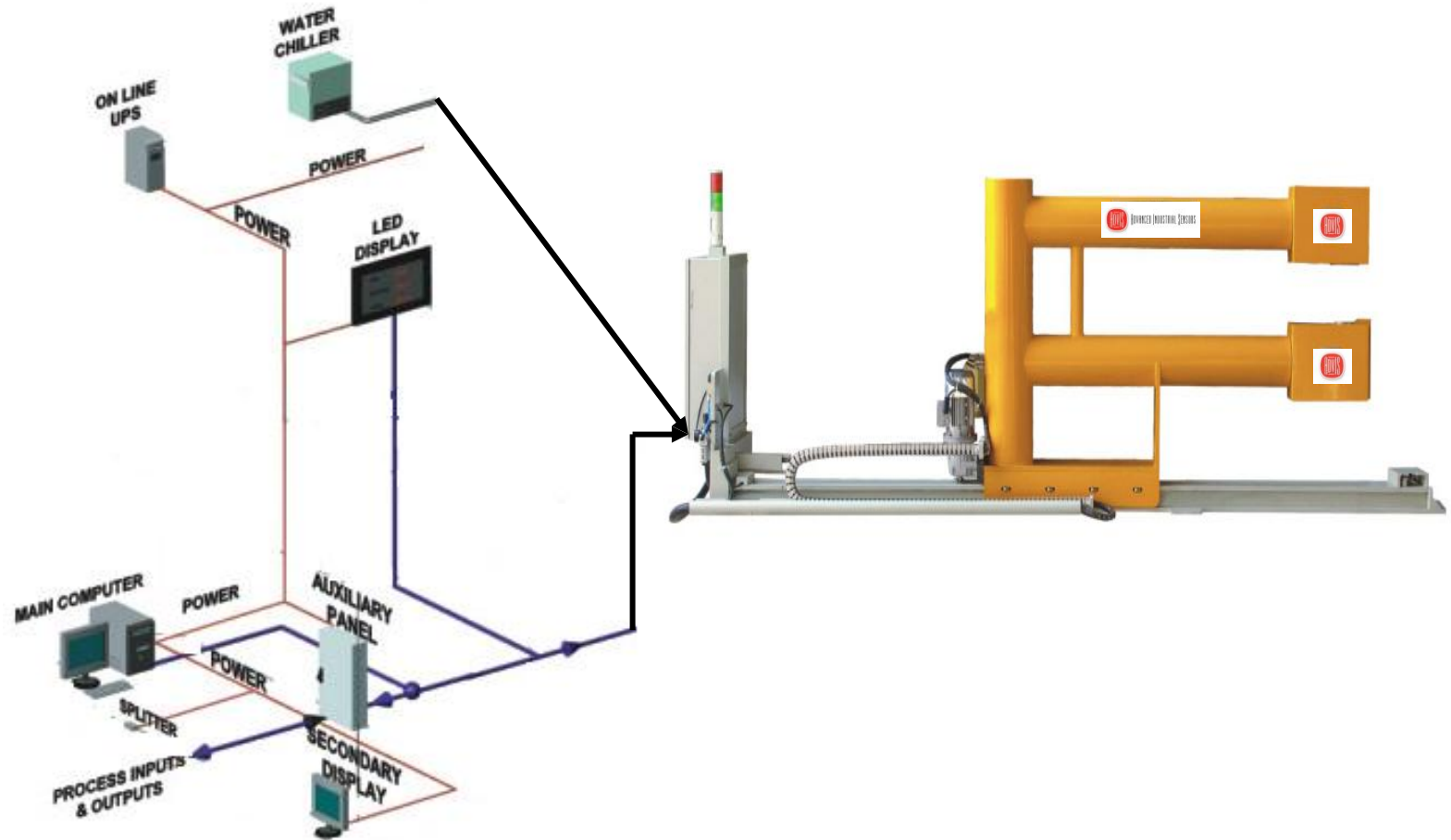


-standard 1.000 W

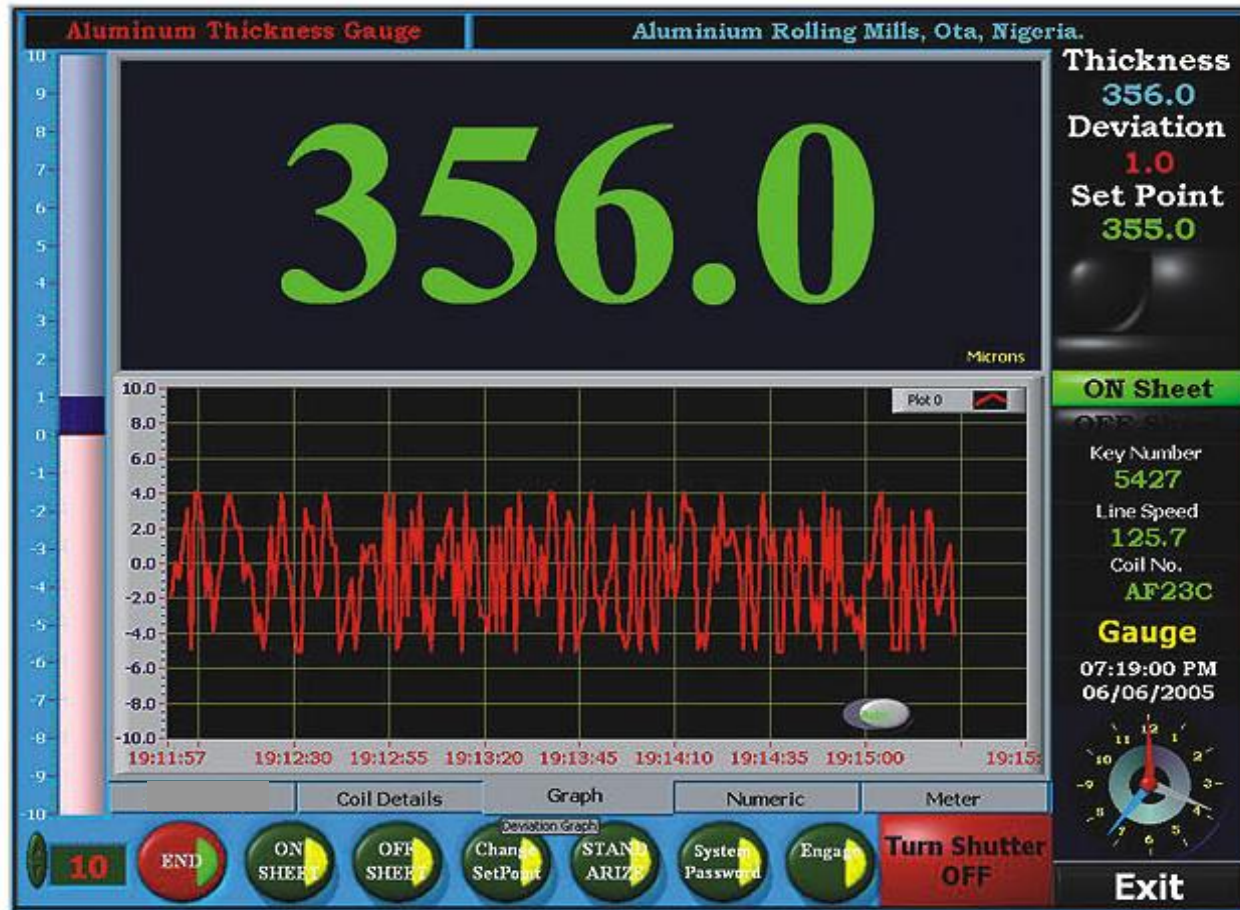
-water, kerosene

-local brands available

# System configuration



# Typical Display



# Performances

- **thickness range: 10  $\mu\text{m}$  to 8 mm**
- **response time: 10 ms standard, adjustable**
- **sampling time: 100 kHz, 2 ms refresh**
- **source power: 5 watts**
- **accuracy: 0,2 % or 0,2  $\mu\text{m}$**
- **reproducibility: 0,1 %**
- **drift: less than 0,2 % or 0,2  $\mu\text{m}$  during 8 h without standardization**
- **noise: less than 0,15 % at 50 ms response time**
- **spot size: adjustable, typical 50 mm**

- **based on customer samples**
- **3 samples minimum per alloy**
- **optional alloy compensation based on chemical analysis**

- **fixed measuring heads**
- **removable head**
- **customized displays**
- **scanning gauge**



# Contact Us at

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