

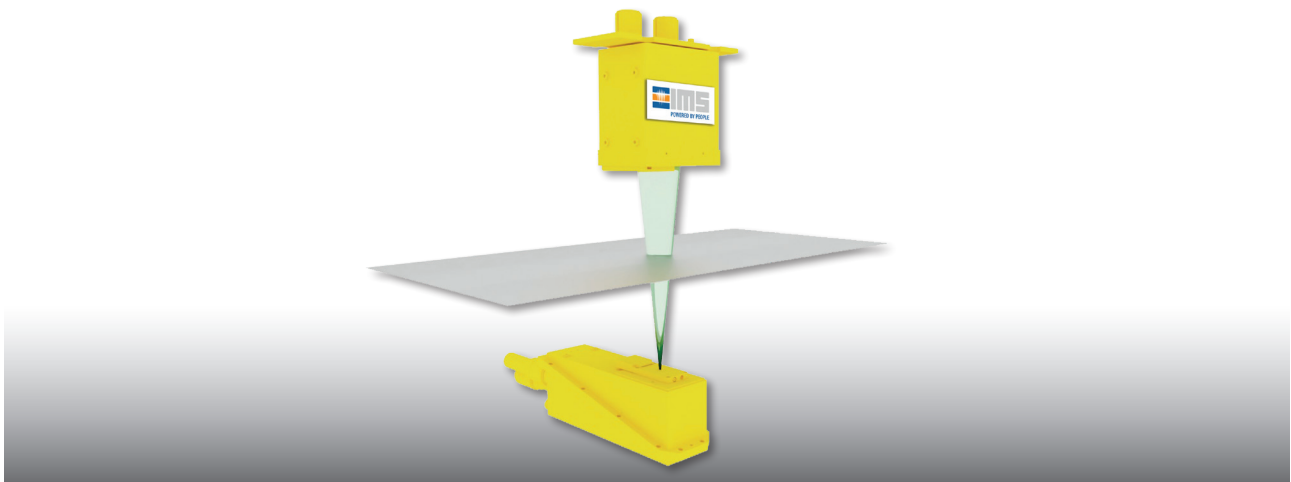


XR Centreline Thickness Gauging System non-retractable gauge

The XR centreline thickness measuring system detects material thickness in the centre of strip by means of continuous, non-contact, real-time measurement.

With this measuring method, a single x-ray source mounted in the roller table underneath the material is used to focus radiation on the measurement area.

A detector unit with a task-based number of ionisation chambers is installed above the material to receive the radiation that passes through the material. The ionisation chambers convert this residual radiation into electrical signals, which are then used to calculate and record the exact thickness of the material.



Measurement Task

- centreline thickness measurement

Special Features

- customisable design and software
- automatic calculation of alloy correction
- remote maintainability
- key components, such as measuring transducers and ionisation chambers (detectors), are developed and manufactured by IMS Messsysteme GmbH, Germany
- compact x-ray generator incl. x-ray controller:
 - high shock and vibration resistance
 - maintenance-free / low-maintenance high-voltage connectors
 - easy to maintain
- ionisation chambers (detectors):
 - pluggable
 - no cooling necessary
 - very long service life
 - highest signal stability
 - maintenance-free
- x-ray source (metal-ceramic tubes)
 - operated at a constant high voltage level, no standard magazines
 - large difference between maximum and operational load (long service life)

Material Data (Typical for Aluminium Hot Rolling Mills)

Typical thickness range:	> 0 up to 180 mm
Speed:	720 m/min, but not limited to
Width:	up to 4,300 mm, but not limited to

Measuring System Data

Gauge type:	fixed mounted, non-traversable measuring point
Radiation source:	X-ray tube (approx. 180 kV/ 2.5 mA, depending on the measuring task)

Measuring Dynamics

Analogue time constant:	10 ms
Cycle time data processing:	10 ms
Cycle time data output:	10 ms

Measuring Accuracy (2 Sigma Values)

Linearity:	0.05 %
Long term drift (10 hrs):	0.1 %
Reproducibility:	0.07 %
Statistical noise (10 ms):	0.1 %, not better than $\pm 10 \mu\text{m}$ (for the max. thickness range)