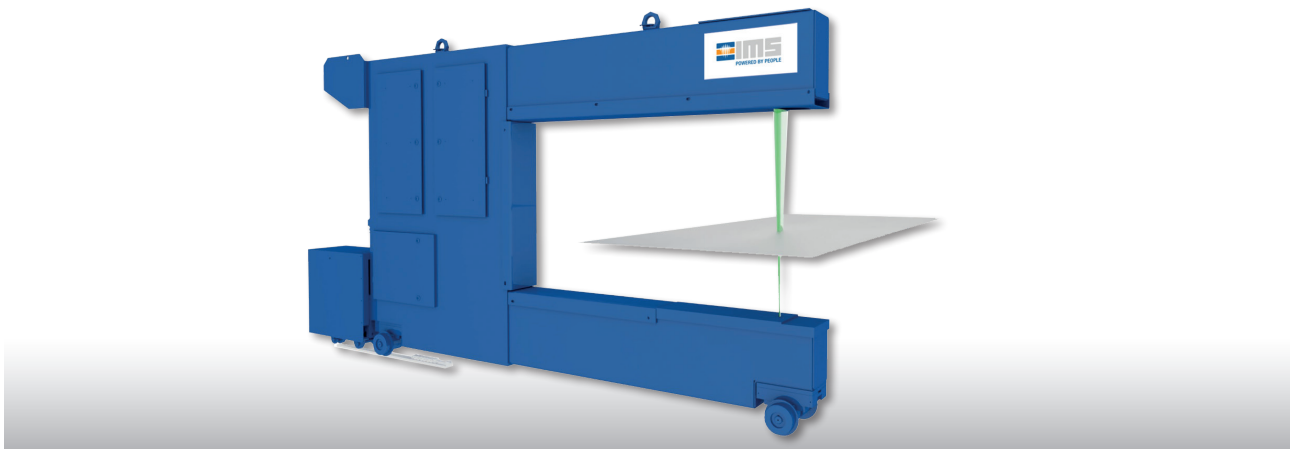# XR Centreline Thickness Measuring System
XR Traversing Thickness Profile Measuring System

The XR centreline thickness measuring system detects material thickness in the centre of strip by means of continuous, non-contact, real-time measurement. The C-frame can optionally be designed as a traversing measuring system and thus measure the thickness cross profile.

With this measuring method, a single x-ray source mounted in the lower beam of the C-frame is used to focus radiation on the measurement area.

The upper beam of the C-frame contains a task-based number of ionisation chambers that convert the radiation that has passed through the material into electrical signals, which are then used to calculate and record the exact thickness of the material.

Measurement Task

- centreline thickness measurements (also available as non-retractable gauge)

- optional:
  - measurement of thickness cross profile
  - integrated temperature measurement

Special Features

- c-frame with customisable dimensions
- 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 Cold 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:	movable c-frame
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 ±10 µm (for the max. thickness range)