

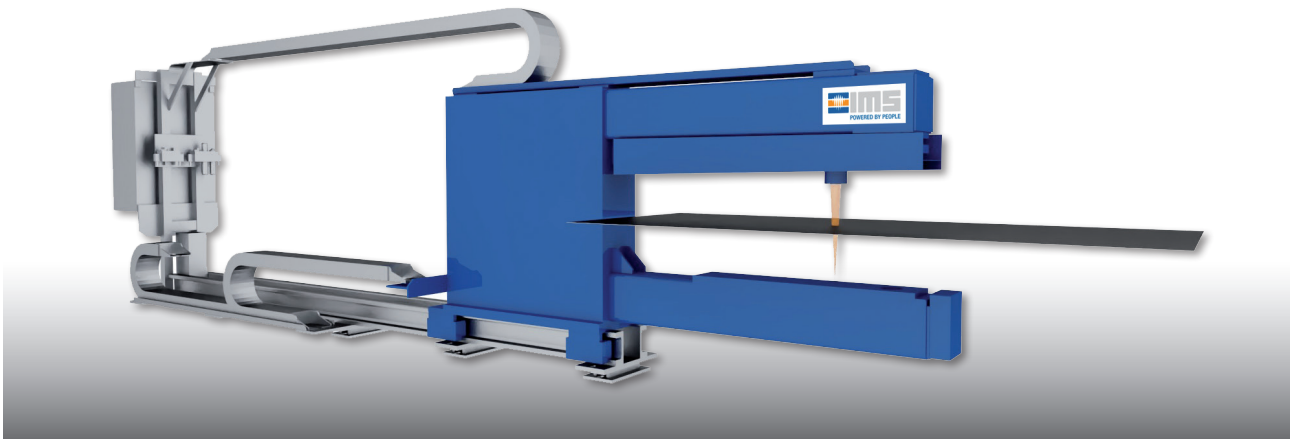


XR Centreline Thickness Measuring System XR Traversing Thickness Profile Measuring System

With its continuous, non-contact real-time measurement, the x-ray centre thickness measuring system detects the thickness of the material in the centre of the strip.

In this measuring method, the material is irradiated by a single x-ray source mounted in the lower beam of the C-frame.

One to four ionisation chambers installed in the upper beam receive the remaining radiation, convert it into electrical signals and determine the exact thickness of the material from them.



Measuring Task

- centreline thickness
- optional:
 - strip thickness cross profile measurement
- strip velocity / length measurement using integrated laser in the upper beam

Special Features

- customised design and software
- automatic calculation of alloy correction
- remote maintainability
- key components, such as measuring transducer, compact x-ray generator incl. x-ray control unit and ionisation chambers (detectors) are developed and manufactured at IMS
- compact x-ray generator incl. x-ray control unit
 - high shock and vibration resistance
 - maintenance-free / low-maintenance high-voltage connectors
 - easy to maintain
- detectors (ionisation chambers):
 - pluggable
 - no cooling necessary
 - very long lifetime
 - 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 (very long lifetime)

Material data (typical for Metal Service Centres)

Typical thickness range:	0.15 up to 8 mm, but not limited to
Speed:	400 m/min, but not limited to
Width:	up to 1,800 mm, but not limited to

Measurement system data

Gauge type:	movable C-frame
Radiation Source:	X-ray tube (metal-ceramic)

Measuring dynamics

Analogue time constant:	2 ms
Total time constant:	5 ms
Cycle time data output:	2 ms

Measuring accuracy (2 sigma values)

Linearity:	0.05 %, not better than $\pm 0.20 \mu\text{m}$
Long term drift (10 hrs):	0.1 %, not better than $\pm 0.20 \mu\text{m}$
Reproducibility:	0.1 %, not better than $\pm 0.25 \mu\text{m}$
Statistical noise (10 ms)	0.1 %, not better than $\pm 0.25 \mu\text{m}$