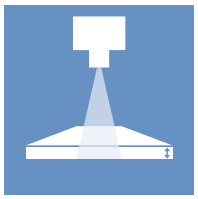

X-Ray Centreline Thickness Gauge

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.

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

- customizable design and software
- automatic calculation of alloy correction
- remote maintainability
- key components such as measuring transducer, X-ray compact generator incl. X-ray controller and ionisation chambers (detectors) developed and manufactured by IMS
- X-ray compact generator incl. x-ray controller
  - high shock and vibration resistance
  - no / low maintenance high voltage plugs
  - easy to maintain
- detectors (ionisation chambers):
  - pluggable
  - no cooling required
  - very long lifetime
  - excellent drift behaviour
  - maintenance free
- X-ray source (metal-ceramic tubes)
  - operated with constant high-voltage level, no standard magazines
  - large difference between maximum and operational load (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 ±0.20 µm
Long term drift (10 hrs):	0.1 %, not better than ±0.20 µm
Reproducibility:	0.1 %, not better than ±0.25 µm
Statistical noise (10 ms)	0.1 %, not better than ±0.25 µm