



STRIP THICKNESS

Laser Gauges VTLG

Application

- Metal strip

Function

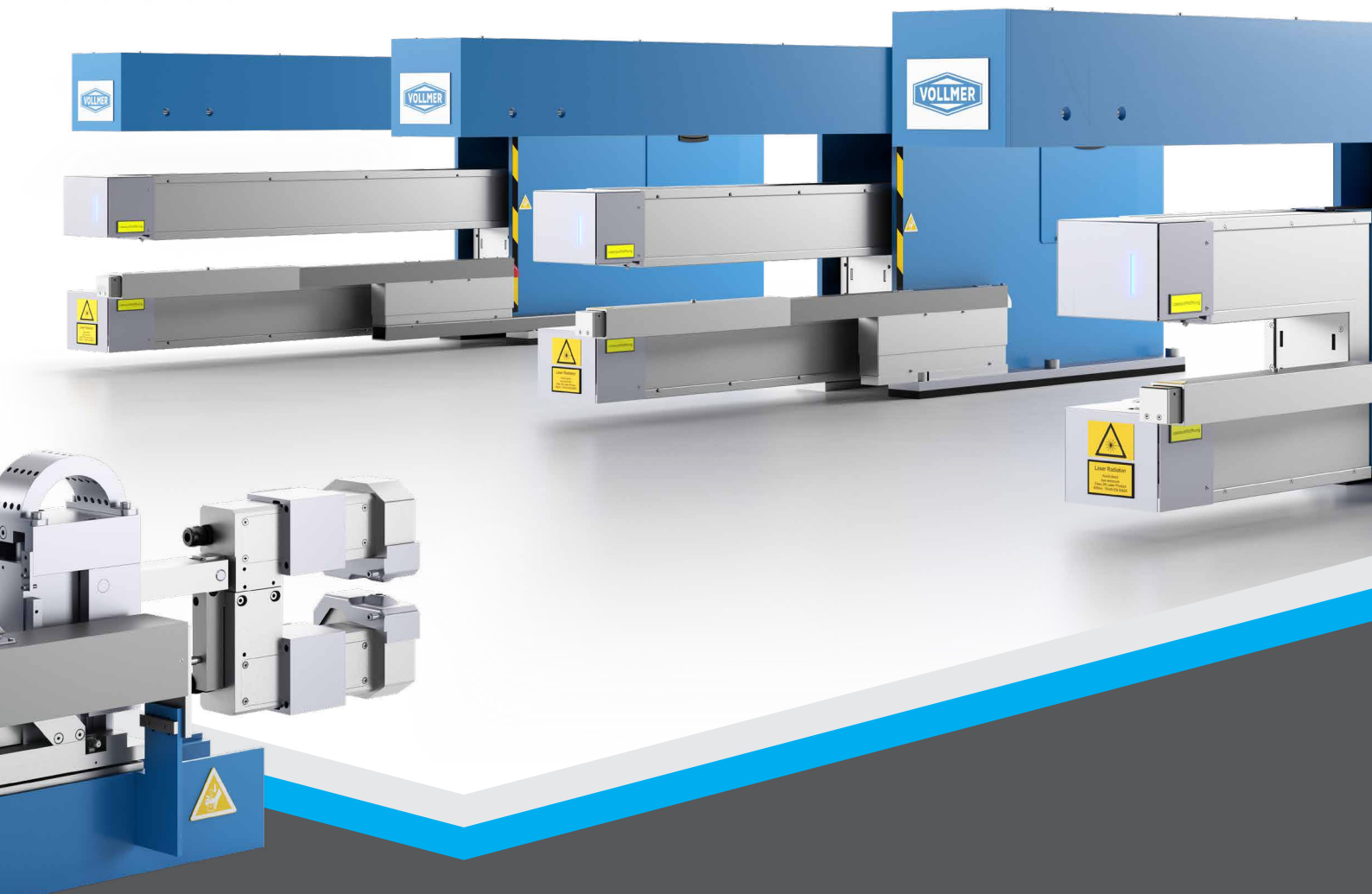
In the upper and lower side of a C-frame is a compact laser sensor which both transmits the measurement beam and receives the reflected light.

Both sensors measure the distance to the strip surface.

The system then calculates the thickness of the strip from the measured distances and the distance between the two sensors.

Advantages

- Installation directly in the mill possible
- Direct, absolute measurement irrespective of the alloy
- Precision up to 0.5 micrometer
- Correct results even with oiled strip



Type Series	VTLG 101/1	VTLG xx6/6	VTLG xx12/20	VTLG xx20/20	
Process Parameters					
Material to be measured	metal strip				
Strip speed	> 0 – 2,000				
Max. strip temperature	180				
Residual moisture on the strip	200	500			mg/m ² per side evenly spread
Max. pass line variation during measurement	2	8	8	20	mm
Measurement Parameters					
Measurement range	0.003 – 2	0.015 – 6	0.015 – 12	0.015 – 20	mm
Air gap	12	65	187	213	mm
Measurement throat depth (- 30 mm = max. strip width at cross profile measurement)	120	VTLG 406/6: 480 VTLG 806/6: 880 VTLG 1406/6: 1,480	VTLG 412/20: 480 VTLG 812/20: 880 VTLG 1412/20: 1,480	VTLG 420/20: 480 VTLG 820/20: 880 VTLG 1420/20: 1,480	mm
Measurement resolution	0.05	0.1	0.1	0.1	µm
Measurement accuracy length profile (at Ti ≥ 10 ms, Rz ≤ 1 µm, angularity error ≤ 1°)	± 0.5	± 1	± 2	± 5	µm
Horizontal positioning	350	alternative 700 1,000 1,300 1,500 1,700			mm
Vertical positioning	± 15	+ 30 / - 10 (possibly limited by strip breakage protection)			mm
Measurement spot diameter	0.1				
Sampling rate	maximal 80				
Averaging time Ti	1 – 1,000				
Dimensions					
Width (installation space) in strip pass direction	102 (122)	163 (185)	193 (215)	193 (215)	mm
Height below pass line (max. vertical positioning)	100 (115)	192 (202)	263 (273)	263 (273)	mm
Width outside line	170	370	370	370	mm
Control					
Positioning accuracy	± 1	± 1			mm
Positioning speed	8	20			m/min
Cross profile measurement	6	12			m/min
Control unit	760 mm x 1,000 mm x 300 mm (H x B x D), 10 m cable length to the gauge				
Connection Data / Consumptions / Environment					
Laser class	3B				
Interfaces	alternative: PROFINET, PROFIBUS DP, TCP/IP, digital and analog in- and outputs				
Supply voltage / Connected load	3 x 380 – 460 V AC, 50 – 60 Hz / 3 kW				
Protection class	C-frame: IP65; control unit: IP55				
Environment	C-frame: 5 – 55 °C; control unit: 5 – 45 °C, relative humidity: 0 – 95 %				
Compressed air quality acc. DIN ISO 8573-1	solids: quality class 5 = max. 40 µm, particle density < 10 mg/m ³ water content: quality class 5 = 9.4 g/m ³ at 10 °C oil content: quality class 4 = oil content < 5 mg/m ³				
Compressed air supply	pressure: min. 5 bar; consumption: max. 15 m ³ /h				
Options	data recording (VRecoS), statistical evaluation (VGraph), pass schedule store, environment control unit > 45 °C: air conditioner, 20 m cable between control unit and gauge				

