Tensile Stiffness Orientation Module

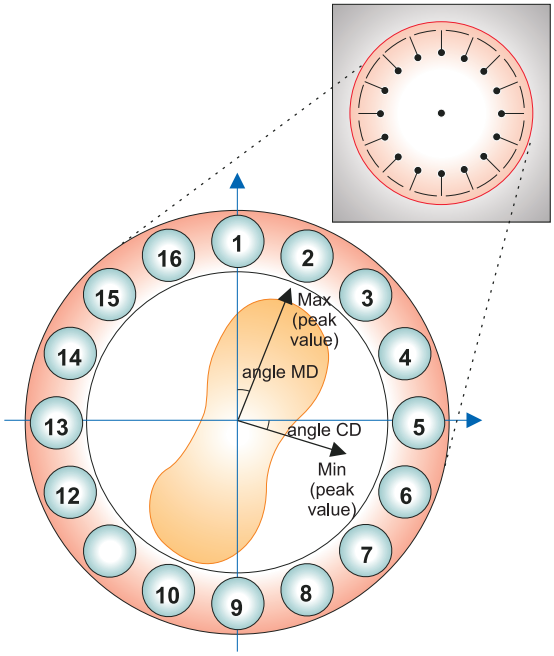
Valmet Paper Lab

The measurement is based on the original Japanese invention that uses ultrasound for evaluating paper properties. This method is also called Fiber Orientation.

Tensile Stiffness Orientation module measures the orientation of fibers in strip samples or paper sheets. The module has eight pairs of transmitters and receivers (120 mm from each other). Each transmitter sends an ultrasonic pulse to two adjacent receivers, giving measured values at 11.25° steps. The module measures how long an ultrasonic pulse travels from transmitter to receiver, giving results as time of propagation [T = km/sec]. Many properties are calculated from this result. Differences in the measured time T in the different directions (angles) are applied to calculate the orientation of fibers.

Benefits for the paper or board maker
Fast, accurate, repeatable measurement
Many calculated paper and board properties can be reported
Reported values are easily adaptable for paper machine and quality optimization

Technical data	
Size (cells)	4
Weight	upper module 6 kg (13.2 lbs)
	lower module 4 kg (8.8 lbs)
Measuring range	
- Speed [km/sec]	0.75–7.70
- Speed [ms]	20–200
Ultras. pulse frequency	25 kHz
Examples of calculated properties:	
- Tensile Stiffness Orientation (TSO), Tensile Stiffness Index (TSI), Tensile MD/CD ratio, Bending Stiffness, Modulus Young	



For more information, contact your local Valmet office. www.valmet.com