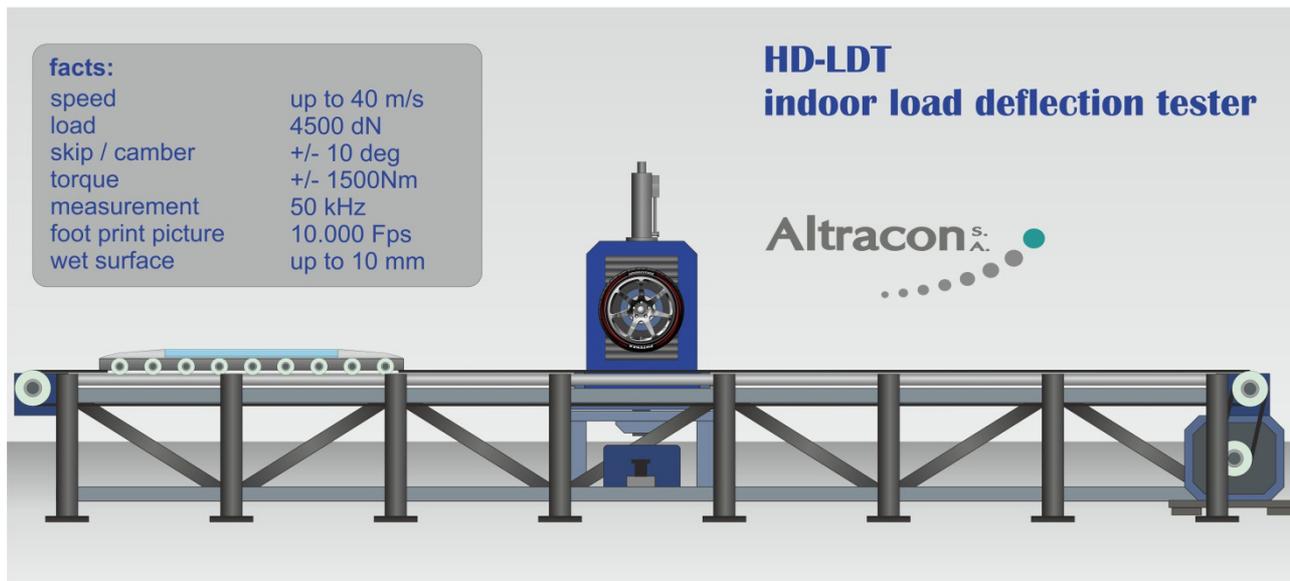


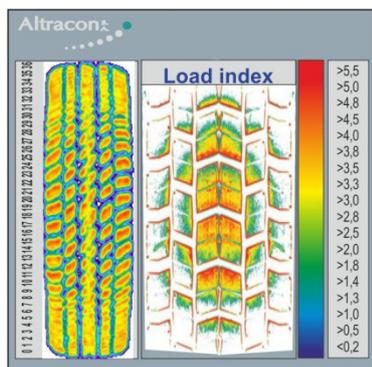
The next generation of mechanical and visual dynamic footprint measurement

Altracon, a leading manufacturer of linear friction testing equipment, recently presented its latest concept for linear dynamic footprint measurement.



The new linear dynamic footprint testing machine combines the experience and expertise of the company in the field of drive and measuring systems for dynamic parameters. In conventional machines consisting essentially of a slide with a wheel bearing, the wheel rolls over a glass plate. This means that a large mass must be moved so that the process is rather slow and does not meet modern requirements for efficient measurement and accuracy.

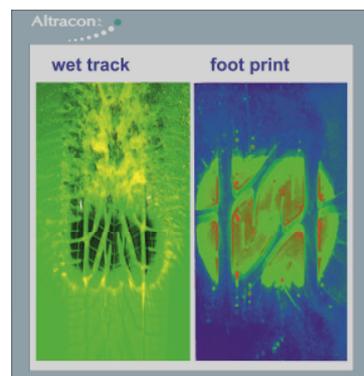
The Altracon **HD-LDT** consists of a high-precision 1/3 component wheel spindle connected to a dynamic servo drive while the wheel is secured in a fixed position. In this design, the wheel can be accelerated and decelerated with up to +/-1000 Nm in order to measure the dynamic effects of block deformation in radial direction. The wheel load (Fz) is applied through a hydraulic linear axle at up to 4500 dN, with an accuracy of +/- 20N. The spindle unit can be adjusted by +/- 15 degrees in camber and toe direction, relative to the centre of the tyre. This is achieved through a highly dynamic hydraulic axle control system developed by Altracon, which is already in use in many test benches.



Speeds of up to 10 degrees/second allow for fast axle load changes and highly dynamic measuring and test performance. The dynamic wheel drive and positioning unit is now combined with a running surface. Mounted on linear rails, the running surface is accelerated by a high-performance servo drive and pushed against the tyre from the bottom. This unique design where both the wheel and the running surface are driven allows for unrivalled performance. Depending on the travelling distance and the actual customer requirements, wheels can be tested at speeds up to 40

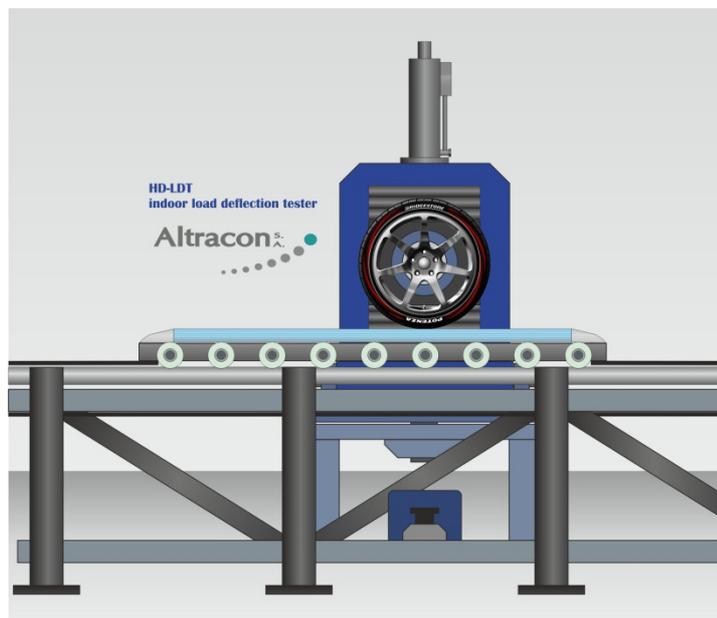
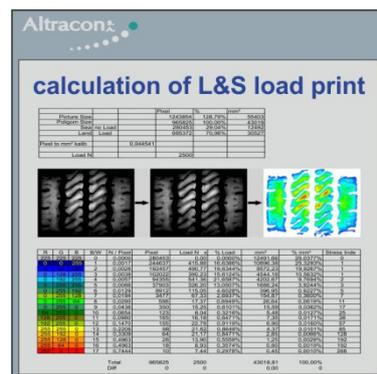
m/s. The running surface made in special crystal-clear safety glass panel features an integrated white and UV light stroboscope system. Together with a high-speed camera, it is thus possible to take footprint pictures and videos of the tyre. As the camera is built into the stationary wheel load unit, images can be captured at a resolution of 1696 x 1710 pixels. For video sequences, frame rates of up to 10,000 frames per second are possible. Such high resolutions turn measuring into a completely new experience.

The optional watering unit enables you to produce water films of up to 10 mm +/- 0.1 mm across the measuring surface. Such test layouts allow you to visualise the function of the tyre structure and tread profile. Apart from the equipment for Fz (optional Fx, Fy) measuring through the wheel spindles, we have integrated number of additional measuring modules into the running surface. A measuring plate with 3-component piezoelectric transducers records the footprint load at a measuring rate of 50 kHz. A separate measuring cell with 3-component force matrix sensors (FMS) records the footprint forces at a resolution of 8 x 8 mm during tyre rolling contact. These measurements are compensated in order to eliminate any effect of the dynamic forces on the results. The Altracon



HD-LDT also caters for grey value evaluation in combination with a special measuring surface for the determination of the load distribution at the pixel resolution of the high-speed camera.

With its latest machine, Altracon has again set new standards in R&D equipment for the tyre industry. And the market is already looking forward to the next innovation from Ralf Berres and his creative team...



For more information and all your queries, please contact our sales agents who would be delighted to assist you.

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