



EL-THICKNESS C-frame made of CFRP

Erhardt+Leimer online thickness measurement system with CFRP frame and chromatic-confocal sensor

High-precision online thickness measurement for tire materials

In addition to many other parameters, material thickness is a decisive factor for reliable tire production. Our measuring systems use state-of-the-art sensor technologies to precisely detect defects and irregularities in tires.

Our non-contact online thickness measurement system EL-THICKNESS C-frame made of CFRP is particularly suitable for continuous measure-

ment and monitoring of material thickness. The chromatic-confocal sensor guarantees high-precision detection of web thickness. At the same time, the CFRP frame, which despite its light weight has high rigidity and the same temperature stability as the granite frame, ensures that the measurement accuracy remains constant over time. Precise material measurement not only enables the highest quality standards to

be achieved but also minimizes waste and thus saves resources.

Due to its slimmer design, the space required for the CFRP frame is significantly less than for a granite frame. In particular, however, the installation of the entire system is much easier. During installation, only a few hundred kilograms need to be moved instead of several tons.



Robust, precise, and highly dynamic sensor system

Lightweight yet robust

- Very low weight
- Maximum dynamics thanks to CFRP
- High stability

High measurement accuracy

- Low thermal expansion
- Minimized susceptibility to vibration
- Precise measurement results

Easy integration

- Easier installation thanks to low weight
- Less space required thanks to slim design

Closed design

- Cable ducts, lighting, and sensors integrated into the frame
- Protection of individual components

Additional sensor technologies

- If required, other sensor technologies can be used on the CFRP frame



| Technical data | |
|---|---|
| Frame | CFRP (carbon fiber reinforced polymer) |
| Profile width | up to 700 mm |
| Chromatic-confocal sensor measuring range | up to 4 mm (Freely scalable for vertical sensor repositioning) |
| Accuracy | up to $\pm 1 \mu\text{m}$ |
| Measuring equipment capability (Cg&Cgk): [TW = 10 x accuracy] | > 1.67 |
| Sensor | Chromatic-confocal (Laser triangulation and interferometric on request) |
| Measuring points | up to 2 (more on request) |
| Scan frequency | Sensor technology-dependent |
| Resolution in profile width | 0.03 μm with a measuring range of 10 mm |
| Displayed resolution | 0.1 μm |
| Interface | EtherNet/IP, Profibus, Profinet, CC-Link, DeviceNet |
| Relative humidity | 30 % to 75 % (non-condensing) |
| Ambient temperature | 0 °C to +50 °C |
| Operating voltage | 115 V to 230 V; 50 Hz/60 Hz; 16 A |
| Protection rating | IP 54 |

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