

Abstract**Method for Applying a Measurement Scale to a Surface of a Guide Rail of a Linear Profile Rail Guide, Measurement Scale for a Linear Encoder, and Linear Encoder**

A method for applying a measurement scale to a guide rail surface of a linear profile rail guide, the guide rail having a first side surface and the measurement scale including at least one track extending linearly and longitudinally toward the guide rail, including several mirror regions arranged alternately one behind the other, and marking regions, uses a pulsed laser to generate a laser beam and introduces a microstructure in a first region corresponding to the at least one marking region of the first side surface. The laser generates the laser beam with a sequence of several light pulses that is directed at the first region so that the laser beam is moved two-dimensionally relative to the first region to irradiate different subregions of the first region one after the other by the light pulses. Each different irradiated subregion has an overlap in, or transverse to, the longitudinal direction with at least two other irradiated subregions.

(FIG. 2)