The invention relates to a calibrating bar, for calibrating a multi-roll leveller for metal strips, said calibrating comprising-a first groove on a first face wherein a first optical fibre is embedded by means of an adhesive, - a second groove on a second face, being opposite to said first face, wherein a second optical fibre is embedded by means of an adhesive, - said first optical fibre and said second optical fibre comprising a fibre Bragg grating and being essentially parallel, - said first optical fibre and said second optical fibre being located at the same distance from said neutral plane N, - said first embedded optical fibre and said second embedded optical fibre being configured such that they can be connected to an optical coupler and such that it has a sufficient length to extend over all the rolls of said multi-roll leveller.