Portable Hardness Tester for Extruded Aluminum

Aluminum structures extruded at high speeds are often checked for quality (specifically strength) with hand-held hardness testers. These hand-held devices have been shown to be very unreliable in predicting material variability associated with the manufacturing process. A design is needed for a small, portable hardness tester that can traverse the length of a long structural section and more accurately and repeatability measure variations in hardness (i.e. strength). The objective is that manufacturers of extruded Al would use this device as an alternative to the hand-held tester, providing a better method for monitoring material quality.