Review of International Standard ISO 17123-4:2012 for Electro-Optical Distance Meters

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SUMMARY

International standard ISO 17123-4 provides procedures for assessing the precision of electro-optical distance measuring instruments. The full test procedure is intended to estimate an instrument's standard uncertainty and zero-point correction. Statistical tests are used to evaluate significance. The simplified test procedure is intended to check an instrument against a specified tolerance. Field tests were conducted to evaluate a Lecia TS60 total station. With the full test, the highest precision measuring mode of the instrument had a precision level of 0.64 millimeters. With the simplified test, the instrument performed within the manufacturer's specifications. Applications of the ISO standard are discussed, including options for the flexible implementation of procedures.