

SE90168

Weight and Center of Gravity Measurement Instrument



Description

WCG instruments use the multi-point weighing method to simultaneously measure both weight and CG. Less than one minute is required to make a measurement, so these instruments are ideally suited to high volume production.

The SE90168 is our low cost model, which allows testing small payloads with medium accuracy.

Measurement Concept

The object is lowered onto the Weight and CG Table and positioned relative to the machine zero (fixturing may be required). The center of

gravity location and weight of the object are then determined by the computer which reads the force transducers and performs the necessary algebraic calculations. Weight is calculated by summing the output of the force transducers. CG is calculated using an equation involving the spacing of the transducers, and the distribution of force. For example, if the weight of the test item is applied equally to all transducers, then the CG of the test item is at the midpoint between the transducers. These instruments measure two axis CG. The third CG coordinate may be measured after rolling the object 90°.

Computer and Software

Windows desktop PC and Software for these instruments is provided. All instructions for use are given on screen. The measurement software supplied prompts the operator, reads the

transducers, calculates weight and CG location, and prints a report. There is a provision for keying in the description or serial number of the object under test, so that the data report can be used to document a series of tests on different objects. Optional custom software calculates the ballast weights required to shift CG location to meet certain specifications.

Calibration

NIST traceable calibration weights are available for this system. These weights are meant to be used with the calibration procedure included in the instrument software.

Instrument Base

The SE90168 must be placed on a flat and leveled surface. Space Electronics can provide a granite plate and a plate stand to mount the instrument on.

SE90168 Instruments

Model	Instrument Type	Interface Plate Dimensions	Payload Weight Capacity	Weight Accuracy	Center of Gravity Accuracy
SE90168	Dual axis weight and CG	18 in x 18 in	60 lb	0.01 lb + 0.3% of measured value	+/- 0.04 inch
SE90168X	Dual axis weight and CG	18 in x 18 in	120 lb	0.03 lb + 0.5% of measured value	+/- 0.04 to 0.06 inch

Custom interfaces are available. Please contact us for more information.