



NATIONAL TYPE EVALUATION PROGRAM

# Certificate of Conformance

for Weighing and Measuring Devices

**For:**

Weighting/Load Receiving Element  
Electronic, Onboard Weighing System or Portable Livestock  
Model: LSXYZZ (see below)  
 $n_{max}$ : 4 000  
 $e_{min}$ : 5lb  
Capacity: Up to 20 000 lb  
Accuracy Class: III / IIIL

**Submitted By:**

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### Standard Features and Options

**Model Number where:**

- The "X" equals "M" for Mobile and "P" for Portable,
- The "YY" designates the capacity in thousands of pounds (example: 15 = 15 000; 20 = 20 000),
- The "ZZ" in the model designation indicates the platform nominal length in feet.

**Platform Size Tested:** 7 ft 4 in W x 18 ft 5 in L: therefore, maximum width = 9 ft 2 in and maximum length = 23 ft.

**Platform Maximum Area:** Not to exceed 135 sq ft.

**Platform Material:** Rubberized non-slip material

**Load Cells Used:** Cardinal Scale model ZX-10000 (NTEP CC 92-192A3) or NTEP certified metrologically equivalent and compatible load cells with an active NTEP Certificate of Conformance.

**Installations must satisfy the relationship of  $v_{min} \cdot d / N$ , where N = number of load cells**

This device was evaluated under the National Type Evaluation Program and was found to comply with the applicable technical requirements of "NIST Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Jerry Buendel  
Chairman, NCWM, Inc.

Ronald Hayes  
Committee Chair, National Type Evaluation Program Committee  
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**Cardinal Scale Manufacturing Company**  
Weighing/Load Receiving Element / LSXYZZ

**Application:** General-purpose livestock weighing applications when connected to an NTEP certified and compatible indicating element. The Indicating element used on the Onboard Weighing System must contain or be used in conjunction with an appropriate sensor package to measure the angularity of the weighbridge and restrict the weighing operation if the weighing element angularity is outside of acceptable limits.

**Identification:** The identification information is stamped on a metal plaque that is attached to the side of the scale near the weight indicator station.

**Sealing:** A Category 1 wire security seal is installed through holes drilled in the heads of retaining screws that secure the cover of the load cell junction box.

**Test Conditions:** The emphasis of the evaluation was on device design, marking and performance of the load receiving element. A Model LSM2018 livestock scale was submitted for evaluation (20 000 lb x 5 lb, two sections, 18ft 5 in x 7ft 4in, 10 ton section capacity). This Weighing/Load Receiving element was interfaced with a Cardinal Model 225 Weight Indicator (NTEP Certificate of Conformance No. 01-011) outfitted with an angle-sensing option card (inclinometer). Several shift tests were conducted using 5000 lb of known test weights. Several increasing/decreasing distributed load tests were conducted using 20 000 lb of known test weights. All tests were conducted with the Weighing/Load Receiving element in 5 positions: flat, tilted 5% in the long-axis (both directions), and tilted 5% in the short-axis (both directions). Tests were repeated after the minimum time and use requirements, using cattle, were satisfied. In addition, the unit was towed a distance of over 300 miles during the minimum time period.

**Evaluated By:** D. Flocken (NTEP)

**Type Evaluation Criteria Used:** *NIST Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, 2016 Edition. *NCWM Publication 14 Weighing Devices*, 2016 Edition.

**Conclusion:** The results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements.

**Information Reviewed By:** J. Truex (NCWM)

**Examples of Device:**

