



NATIONAL TYPE EVALUATION PROGRAM

# Certificate of Conformance

for Weighing and Measuring Devices

**For:**

Weighing/Load Receiving Element  
Livestock / Vehicle Scale, Modular, Load Cell  
Model: XXYY-LSC  
 $n_{max}$ : 10 000  
 $e_{min}$ : 5 lb  
Capacity: 40 000 lb to 60 000 lb  
Platform: see below  
Section Capacity: 40 000 lb  
Accuracy Class: III L

**Submitted by:**

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**Standard Features and Options**

- The XX in the model designation indicates nominal capacity in tons.
- The YY in the model designation indicates the platform nominal length in feet.
- The LSC in the model designation indicates the LSC series of modular livestock scale load-receiving element.

Installations Must Satisfy the Relationships of:

Nominal Capacity  $\leq$  Section Capacity for a Two-Section Scale  
Nominal Capacity  $\leq$  Twice the Section Capacity for a Three-Section Scale  
 $V_{min} \leq e \div \sqrt{N}$  (Where N is the number of load cells in the scale)

- Maximum module length: 17.5 ft
- Maximum distance between sections: 17.5 ft
- Minimum platform area: 87.5 ft<sup>2</sup>
- Module width: 8 ft to 12 ft
- Deck Material: Concrete

**Load Cells Used:**

- Cardinal Scale Manufacturing Company SB20000S strain gauge beam cells (NTEP Certificate of Conformance Number 87-059) or Metrologically Equivalent and Compatible Load Cells with an Active NTEP Certificate of Conformance.

Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

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.

Stephen Benjamin  
Chairman, NCWM, Inc.

Kurt Floren  
Committee Chair, National Type Evaluation Program Committee  
Issued: [Month, Day, Year]

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**Cardinal Scale Manufacturing Co.**  
Weighing/Load Receiving Element / XYYY-LSC

**Application:** General purpose livestock or vehicle or livestock/vehicle weighing applications when connected to an NTEP certified and compatible indicating element.

**Identification:** The identification information is stamped on a metal badge that is screwed to the side of the scale near the center of the scale platform.

**Sealing:** A Category 1 lead-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 2535-LSC livestock scale was submitted for evaluation (50,000 lb x 5 lb, three sections, 35 ft x 10 ft, 20 ton section capacity). The longest span between sections was 17 ft 6 inches. This Weighing / Load Receiving element was interfaced with a Cardinal Model 225 Weight Indicator (NTEP Certificate of Conformance No. 01-011). Several section and mid span test were conducted using 20 000 lb of known test weights. Several increasing / decreasing distributed load test were conducted using 50 000 lb of known test standards. In addition a shift test at 21 000 lb of known test weights, and a discrimination test was conducted. Physical security seals were applied to the indicator and load cell junction box. Similar tests were repeated after the minimum time and use requirements were met.

**Evaluated By:** C. Harris (OH)

**Type Evaluation Criteria Used:** *NIST Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, 2013 Edition. *NCWM Publication 14 Weighing Devices* 2013 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:**



Load Cell Mounting



LSC Series Load Receiver