



NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:

Weighing/Load Receiving Element
Load Cell Electronic
Model: LSE Series
 n_{max} : 8 000
 e_{min} : 5 lb
Capacity: 24 000 lb to 50 000 lb
Platform: up to 12' (width) x 8.75' to 52.5' (length)
CLC: 16 000 lb
Section Capacity: 20 000 lb
Accuracy Class: III L

***Submitted By: Contact Info. Updated December 2022**

Cardinal Scale Manufacturing Company
102 East Daugherty Street
Webb City, MO 64870
Tel: 417-673-4631 x 212
Fax: 417-673-2153
Contact: Thomas Schuller
Email: tschuller@cardet.com
Web site: www.cardet.com

Standard Features and Options

Model Number LSEXXYY where XX represents capacity in tons and YY represents the platform length in feet.

Standard Features:

- Platform Material: Concrete

Load Cell Used:

- Cardinal Scale Mfg. Model SB-20000S (Certificate of Conformance No. 87-059) or metrological equivalent

Indicator:

- Cardinal Scale Mfg. Model 748-S (Certificate of Conformance No. 93-127) or metrological equivalent

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. *Editorial changes, not affecting the type or metrological content, corrected this certificate.

Ivan Hankins
Chairman, NCWM, Inc.

Hal Prince
Chairman, NTEP Committee
Issued: July 5, 2022

1135 M Street, Suite 110 / Lincoln, Nebraska 68508

The National Conference on Weights and Measures (NCWM) does not approve, recommend or endorse any proprietary product or material, either as a single item or as a class or group. Results shall not be used in advertising or sales promotion to indicate explicit or implicit endorsement of the product or material by the NCWM.



Cardinal Scale Manufacturing Co.

Weighing/Load Receiving Element / LSE Series

Application: General-purpose livestock scale applications, vehicle or combination livestock/vehicle scale weighing element when interfaced with a compatible and certified indicating element.

Identification: The identification plate is glued to the load cell junction box on the side of the scale facing the indicator.

Sealing: Sections are adjusted in the load cell junction boxes (one for each section) and can be sealed with physical security seals. Overall calibration adjustments are made at the indicator and can be sealed with a physical seal.

Test Conditions: This Certificate supersedes Certificate of Conformance Number 97-043A2 and is issued to correct an error in identifying the e_{\min} value. On previous Certificates of Conformance, the value was incorrectly identified as v_{\min} . In addition, the minimum platform width was changed to cover widths less than 12'. No additional testing was deemed necessary. Previous test conditions are listed below for reference.

Certificate of Conformance Number 97-043A2: This Certificate supersedes Certificate of Conformance Number 97-043A1 and is issued to add the requirement for section capacity for the Livestock application of the Weighing/Load Receiving Element. This Certificate is issued without additional testing. It is based on the change in NIST Handbook 44 requiring that the nominal capacity not exceed twice the section capacity for a weighing element of three or more sections. The original evaluation was on a 40 000 lb nominal capacity device. The previous test conditions are listed below for reference.

Certificate of Conformance Number 97-043A1: This Certificate supersedes Certificate of Conformance Number 97-043 and is issued to expand the application to include vehicle weighing. The certificate is issued without additional testing. Previous test conditions are listed below for reference.

Certificate of Conformance Number 97-043: The Model LSE2035 was submitted for evaluation (12 ft x 35 ft, three-section platform with a capacity of 40 000 lb and a 16 000 lb CLC). The longest span between sections was 17' 6 3/4". The emphasis of this evaluation was on device design and performance. The scale was tested to 35 000 lb with known test standards. The scale was interfaced with a Cardinal indicator Model 748-S. Several section and mid span tests were conducted using 16 000 lb of known test standards. Several increasing/decreasing distributed load tests were conducted using 35 000 lb of known test standards. Physical security seals were applied to the indicator and load cell junction boxes. Similar tests were repeated after the minimum time and use requirements were met.

Evaluated By: L. Walrod (NE) and R. Suiter (NE) 97-043; D. Flocken (NCWM) 97-043A3

Type Evaluation Criteria Used: NIST, Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices, 1997. NCWM, Publication 14: Weighing Devices, 1997.

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

Information Reviewed By: S. Patoray, L. Bernetich (NCWM) 97-043A1, 97-043A2; D. Flocken (NCWM) 97-043A3



Cardinal Scale Manufacturing Co.
Weighing/Load Receiving Element / LSE Series

Examples of Device:



Model LSE for livestock applications



Model LSE for vehicle applications

