National Conference on Weights and Measures
15245 Shady Grove Road, Suite 130 • Rockville, MD 20850

Certificate Number: 95-074

National Type Evaluation Program
Certificate of Conformance for Weighing and Measuring Devices

For:
Load Cell
Three Beam, Single Point
Model Family: RL1040-/RL1041-NX-YYkg
n_{max} Single Cell: 5000
Capacity: 5 to 100 kg

Accuracy Class: III

Submitted by:
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Standard Features and Options

*In the specific load cells in this family, N represents Class III, X represents the number of divisions in thousandths, and YY represents the load cell capacity.

The Model RL1041-NX-YYkg is identical to the Model RL1040-NX-YYkg except that two horizontal threads in the "live" end of the cell have been eliminated and the internal electronics of the load cell have been modified in a way that results in an electrically asymmetrical design. The Model RL1041-NX-YYkg load cell should not be used with zero circuits that are sensitive to a change in load cell symmetry.

Capacity (kg)	V_{min} (kg)	Minimum Dead Load (kg)
5	0.00045	0
7	0.00063	0
10	0.0009	0
15	0.00135	0
20	0.0018	0
30	0.0027	0
50	0.0045	0
75	0.0068	0
100	0.009	0

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

This device was evaluated under the National Type Evaluation Program (NTEP) and was found to comply with the applicable technical requirements of 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.

Effective Date: June 2, 1995

Louis E. Straub
Chairman, NCWM, Inc.

G. Weston Diggs
Chairman, National Type Evaluation Program Committee

Issue date: November 13, 1995

This is a reissuance by the NCWM of a Certificate of Conformance already issued by the National Institute of Standards and Technology.

Rice Lake Weighing Systems
Three Beam, Single Point
Model: RL1040-/RL1041-NX-YYkg

Application: The load cells may be used in Class III scales for single and multiple cell applications consistent with the model designations and parameters specified in this certificate. Load cells of a given accuracy class may be used in applications with lower accuracy class requirements provided the number of scale divisions, the v_{min} values, and temperature range are suitable for the application. The manufacturer may market load cells with fewer scale divisions (n_{max}) and with larger v_{min} values than those listed on the certificate. However, the load cells must be marked with the appropriate n_{max} and v_{min} for which the load cell may be used.

Test Conditions: This Certificate is issued based on the following tests and information supplied by the manufacturer.

One 5-kg and one 50-kg capacity load cell were tested using dead weights. The data were analyzed for single load cell applications. The cells were tested over a temperature range of -10 to 40 ˚C. Three tests were run on each cell at each temperature. The temperature effect on zero was measured and a time dependence (creep) test was performed. The barometric pressure test was waived due to the insensitivity of the load cell design to changes in barometric pressure. The manufacturer's laboratory was used to collect the test data. Representatives from the National Institute of Standards and Technology evaluated the manufacturer's test facility, witnessed repeat tests on two load cells, and analyzed the data. The results indicate that the load cells comply with the applicable requirements of NIST Handbook 44.

The Model RL1041-NX-YYkg is identical to the Model RL1040-NX-YYkg except that two horizontal threads in the "live" end of the cell have been eliminated and the internal electronics of the load cell have been modified in a way that results in an electrically asymmetrical design. The Model RL1041-NX-YYkg load cell should not be used with zero circuits that are sensitive to a change in load cell symmetry. Data submitted by the manufacturer indicates the metrological characteristics of the load cell are not affected.
Two 5-kg capacity load cells were tested at the California Division of Measurement Standards, and two 100-kg capacity load cells were tested at NIST using dead weights as the reference standard. The data were analyzed for single load cell applications. The cells were tested over a temperature range of -10 to 40 ˚C. Three tests were run on each cell at each temperature. The temperature effect on zero was measured and a time dependence (creep) test was performed. The barometric pressure test was waived due to the insensitivity of the load cell design to changes in barometric pressure.

Representatives from the National Institute of Standards and Technology analyzed the data. The results indicate that the load cells comply with the applicable requirements of NIST Handbook 44.

Type Evaluation Criteria Used: NIST Handbook 44, 1995 Edition

Tested By: NIST Force Group, NIST Office of Weights and Measures

Information Reviewed By: Lynn Sebring (NIST)