

NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance for Weighing and Measuring Devices

For:

Non-Computing Scale Digital Electronic Jeweler's, Grain, Precision and Analytical Model: ME Series, JE Series, TLE Series and PHE Series n_{max} : 45 000 to 250 000 (See pages 2 & 3) e_{min} : 1 mg to 10 mg (See pages 2 & 3) Accuracy Class: I / II Submitted By: Mettler-Toledo, LLC 1150 Dearborn Drive Worthington, Ohio 43085 Tel: 614-438-4387 Fax: 614-438-4355 Contact: Scott Davidson Email: <u>scott.davidson@mt.com</u> Website: <u>www.mt.com</u>

Standard Features and Options

- Semi-automatic (push-button) zero setting mechanism (SAZSM)
- Semi-automatic (push-button) tare
- Initial zero setting mechanism (IZSM)
- Semi or fully automatic internal calibration feature (FACT)
- Automatic zero tracking (AZT)
- Liquid crystal display (LCD)
- AC/DC adapter
- Draft shield
- RS232 Communication port
- Remote printer capability
- Counting Feature for Prescription Filling (Class I/II only)
- Units: mg, g, kg, oz, lb, ct, ozt, and dwt display capability
- Platter Size: 90 mm diameter, 120 mm diameter, 180 mm x 180 mm

Load Cell Used:

• Mettler-Toledo magnetic force restoration load cell (Non-NTEP)

Temperature Range: 10 °C to 30 °C (50 °F to 86 °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.

VanBuren

Chairman, NCWM, Inc.

Stephen Benjamin Committee Chair, NTEP Committee Issued: November 27, 2019

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.



Non-Computing Scale / ME Series, JE Series, TLE Series and PHE Series

Application: General purpose Class I, II weighing applications including analytical, precision and the weighing of jewelry and precious metals.

Identification: The required information appears on an adhesive label applied to the side of the scale.

| Model | Analytical /Precision | Gold/ Jewelry | Pharmacy | Education | Capacity | d | e | Accuracy Class | n _{max} |
|----------------------------------|--------------------------|------------------|----------|-----------|---------------------|------------|-----------|-------------------|------------------|
| JE103Gx/A | | X | | | 120 g | 0.001 g | 0.01 g | II | 12000 |
| JE153Gx/A | | Х | | | 150 g | 0.001 g | 0.01 g | II | 15000 |
| JE203Gx/A | | Х | | | 220 g | 0.001 g | 0.01 g | II | 22000 |
| JE253Gx/A | | Х | | | 250 g | 0.001 g | 0.01 g | II | 25000 |
| TEADOR / | | 37 | | | 200 + 160 | 0.001 ct / | 0.01 ct / | TT /T | 30000/ |
| JE303Cx/A | | Х | | | 300 ct /60 g | 0.0001 g | 0.001 g | 11/1 | 60000 |
| JE303Gx/A | | Х | | | 320 g | 0.001 g | 0.01 g | II | 32000 |
| JE353Gx/A | | Х | | | 350 g | 0.001 g | 0.01 g | II | 35000 |
| | | V | | | 400 - 4 / 90 | 0.001 ct / | 0.01 ct / | TT /T | 40000 / |
| JE403CX/A | | Х | | | 400 ct / 80 g | 0.0001 g | 0.001 g | 11/1 | 80000 |
| JE403Gx/A | | X | | | 420 g | 0.001 g | 0.01 g | II | 42000 |
| JE453Gx/A | | X | | | 450 g | 0.001 g | 0.01 g | II | 45000 |
| JE503Gx/A | | X | | | 520 g | 0.001 g | 0.01 g | II | 52000 |
| $IE502C_{W}/\Lambda$ | | v | | | 500 at / 100 at | 0.001 ct / | 0.01 ct / | Т | 50000 / |
| JE305CX/A | | Λ | | | 500 ct / 100 g | 0.0001 g | 0.001 g | 1 | 100000 |
| JE602Gx/A | | X | | | 620 g | 0.01 g | 0.1 g | II | 6200 |
| $IE603Cv/\Lambda$ | | x | | | 600 ct / 120 g | 0.001 ct / | 0.01 ct / | т | 60000 / |
| JL005CAA | | Λ | | | 000 ct / 120 g | 0.0001 g | 0.001 g | 1 | 120000 |
| $IE703Cx/\Lambda$ | | v | | | 700 ct / 140 g | 0.001 ct / | 0.01 ct / | Т | 70000 / |
| JE/05CA/A | | Λ | | | 700 Ct / 140 g | 0.0001 g | 0.001 g | 1 | 140000 |
| JE802Gx/A | | X | | | 820 g | 0.01 g | 0.1 g | II | 8200 |
| IF803Cx/A | | x | | | 800 ct / 160 g | 0.001 ct / | 0.01 ct / | Т | 80000 / |
| JEGOSCATI | | | | | 000 007 100 5 | 0.0001 g | 0.001 g | | 160000 |
| JE903Cx/A | | x | | | 900 ct / 180 g | 0.001 ct / | 0.01 ct / | I | 90000 / |
| | | | | | , | 0.0001 g | 0.001 g | | 180000 |
| JE1002Gx/A | | X | | | 1200 g | 0.01 g | 0.1 g | 11 | 12000 |
| JE1003Cx/A | | Х | | | 1000 ct / 200 g | 0.001 ct / | 0.01 ct / | Ι | 100000 / |
| | | | | | | 0.0001 g | 0.001 g | | 200000 |
| JE1103Cx/A | | X | | | 1100 ct / 220 g | 0.001 ct/ | 0.01 ct / | Ι | 110000 / |
| | | | | | | 0.0001 g | 0.001 g | | 120000 / |
| JE1203Cx/A | | Х | | | 1200 ct / 240 g | 0.001 ct/ | 0.01 ct / | Ι | 240000 / |
| IE1502Cm/A | | v | | | 1500 a | 0.0001 g | 0.001 g | п | 240000 |
| JE1302Gx/A IE2002Gx/A | | | | | 1300 g | 0.01 g | 0.1 g | 11 11 | 22000 |
| JE2002Gx/A JE2502Gx/A | | | | | 2200 g | 0.01 g | 0.1 g | 11 | 22000 |
| JE2302Gx/A IE3002Gx/A | | | | | 2300 g | 0.01 g | 0.1 g | 11 | 32000 |
| JE3002GX/A | | | | | 3200 g | 0.01 g | 0.1 g | 11 | 35000 |
| JE3302GX/A IE4001Gx/A | | X | | | 1200 g | 0.01 g | 0.1 g | П | 42000 |
| JE4001GX/A IE4002Gx/A | | X | | | 4200 g | 0.1 g | 0.1 g | П | 42000 |
| IE4502Gx/A | | X | | A | 4200 g | 0.01 g | 0.1 g | II | 45000 |
| JE4302Gx/A IE5002Gx/A | | X | | | 5200 g | 0.01 g | 0.1 g | II | 52000 |
| *ME54x/A | x | 1 | | | 52 g | 0.001 g | 0.001 g | I | 52000 |
| MF84y/A | X | | | | <u>32 g</u> 82 g | 0.0001 g | 0.001 g | I | 82000 |
| $ME103x/\Delta$ | X | | | | 120 σ | 0.0001 g | 0.001 g | I | 12000 |
| ME103x/A | X | | | | 120 g 120 σ | 0.001 g | 0.01 g | I | 12000 |
| ME153x/A | X | | | | 150 σ | 0.001 g | 0.01 g | II | 15000 |
| $\frac{ME153X/A}{ME154v/\Delta}$ | X | | | | 150 g | 0.001 g | 0.01 g | I | 150000 |
| $\frac{ME104A/A}{ME203v/\Delta}$ | X | | | | 220 g | 0.0001 g | 0.01 g | I | 22000 |
| ME203X/A | X | | | | 220 g | 0.001 g | 0.01 g | I | 22000 |
| $\frac{ME204A/A}{ME253x/\Delta}$ | X | | | | 220 g | 0.0001 g | 0.01 g | I | 25000 |
| *MF254v/A | x | | | | 250 g | 0.0001 g | 0.01 g | I | 25000 |
| MIL 2JTA/A | Λ | | 1 | 1 | 250 g | 0.0001 g | 0.001 g | 1 | 230000 |



Non-Computing Scale / ME Series, JE Series, TLE Series and PHE Series

| Model | Analytical /Precision | Gold/ Jewelry | Pharmacy | Education | Capacity | d | e | Accuracy Class | n _{max} |
|------------|--------------------------|------------------|----------|-----------|----------|----------|---------|-------------------|------------------|
| ME303x/A | Х | · · | | | 320 g | 0.001 g | 0.01 g | II | 32000 |
| ME353x/A | Х | | | | 350 g | 0.001 g | 0.01 g | II | 35000 |
| ME403x/A | Х | | | | 420 g | 0.001 g | 0.01 g | II | 42000 |
| *ME453x/A | Х | | | | 450 g | 0.001 g | 0.001 g | II | 45000 |
| ME503x/A | Х | | | | 520 g | 0.001 g | 0.01 g | II | 52000 |
| ME802x/A | Х | | | | 820 g | 0.01 g | 0.1 g | II | 8200 |
| ME1002x/A | Х | | | | 1200 g | 0.01 g | 0.1 g | II | 12000 |
| ME1502x/A | Х | | | | 1500 g | 0.01 g | 0.1 g | II | 15000 |
| ME2002x/A | Х | | | | 2200 g | 0.01 g | 0.1 g | II | 22000 |
| ME2502x/A | Х | | | | 2500 g | 0.01 g | 0.1 g | II | 25000 |
| ME3002x/A | Х | | | | 3200 g | 0.01 g | 0.1 g | II | 32000 |
| ME3502x/A | Х | | | | 3500 g | 0.01 g | 0.1 g | II | 35000 |
| ME4001x/A | Х | | | | 4200 g | 0.1 g | 0.1 g | II | 42000 |
| ME4002x/A | Х | | | | 4200 g | 0.01 g | 0.1 g | II | 42000 |
| *ME4502x/A | Х | | | | 4500 g | 0.01 g | 0.1 g | II | 45000 |
| ME5002x/A | Х | | | | 5200 g | 0.01 g | 0.1 g | II | 52000 |
| PHE54x | | | Х | | 52 g | 0.0001 g | 0.001 g | Ι | 52000 |
| PHE84x | | | Х | | 82 g | 0.0001 g | 0.001 g | Ι | 82000 |
| PHE103x | | | Х | | 120 g | 0.001 g | 0.01 g | II | 12000 |
| PHE104x | | | Х | | 120 g | 0.0001 g | 0.001 g | Ι | 120000 |
| PHE153x | | | Х | | 150 g | 0.001 g | 0.01 g | II | 15000 |
| PHE154x | | | Х | | 150 g | 0.0001 g | 0.001 g | Ι | 150000 |
| PHE203x | | | Х | | 220 g | 0.001 g | 0.01 g | II | 22000 |
| PHE204x | | | Х | | 220 g | 0.0001 g | 0.001 g | Ι | 220000 |
| PHE253x | | | Х | | 250 g | 0.001 g | 0.01 g | II | 25000 |
| PHE254x | | | Х | | 250 g | 0.0001 g | 0.001 g | Ι | 250000 |
| PHE303x | | | Х | | 320 g | 0.001 g | 0.01 g | II | 32000 |
| PHE353x | | | Х | | 350 g | 0.001 g | 0.01 g | II | 35000 |
| PHE403x | | | Х | | 420 g | 0.001 g | 0.01 g | II | 42000 |
| PHE453x | | | Х | | 450 g | 0.001 g | 0.001 g | II | 45000 |
| PHE802x | | | Х | | 820 g | 0.01 g | 0.1 g | II | 8200 |
| PHE1002x | | | Х | | 1200 g | 0.01 g | 0.1 g | II | 12000 |
| PHE1502x | | | Х | | 1500 g | 0.01 g | 0.1 g | II | 15000 |
| PHE2002x | | | Х | | 2200 g | 0.01 g | 0.1 g | II | 22000 |
| PHE2502x | | | Х | | 2500 g | 0.01 g | 0.1 g | II | 25000 |
| PHE3002x | | | X | | 3200 g | 0.01 g | 0.1 g | II | 32000 |
| PHE3502x | | | X | | 3500 g | 0.01 g | 0.1 g | II | 35000 |
| PHE4001x | | | X | | 4200 g | 0.1 g | 0.1 g | II | 42000 |
| PHE4002x | | | X | | 4200 g | 0.01 g | 0.1 g | II | 42000 |
| PHE4502x | | | X | | 4500 g | 0.01 g | 0.1 g | 11 | 45000 |
| TLE54x | | | | X | 52 g | 0.0001 g | 0.001 g | l | 52000 |
| TLE84x | | | | X | 82 g | 0.0001 g | 0.001 g | 1 | 82000 |
| TLE103x | | | | X | 120 g | 0.001 g | 0.01 g | 11 | 12000 |
| TLE104x | | | | X | 120 g | 0.0001 g | 0.001 g | 1 | 120000 |
| TLE153x | | | | X | 150 g | 0.001 g | 0.01 g | 11 | 15000 |
| TLEI54x | | | | X | 150 g | 0.0001 g | 0.001 g | l | 150000 |
| TLE203x | | | | X | 220 g | 0.001 g | 0.01 g | II I | 22000 |
| 1LE204x | | | | X | 220 g | 0.0001 g | 0.001 g | <u> </u> | 220000 |
| 1LE253x | | | | X | 250 g | 0.001 g | 0.01 g | | 25000 |
| 1LE254X | | | | X | 250 g | 0.0001 g | 0.001 g | 1 | 250000 |
| 1LE303X | | | | X | 320 g | 0.001 g | 0.01 g | 11 | 32000 |
| 1LE353X | | | | X | 350 g | 0.001 g | 0.01 g | | 35000 |
| 1LE403X | | | | X | 420 g | 0.001 g | 0.01 g | | 42000 |
| 1LE453x | | | | X | 450 g | 0.001 g | 0.001 g | | 45000 |
| 1LE503x | | | | X | 520 g | 0.001 g | 0.01 g | | 52000 |
| TLE802x | ļ | l | l | X | 820 g | 0.01 g | 0.1 g | 11 | 8200 |



Non-Computing Scale / ME Series, JE Series, TLE Series and PHE Series

| Model | Analytical /Precision | Gold/ Jewelry | Pharmacy | Education | Capacity | d | e | Accuracy Class | n _{max} |
|----------|--------------------------|------------------|----------|-----------|----------|--------|-------|-------------------|------------------|
| TLE1002x | | | | Х | 1200 g | 0.01 g | 0.1 g | II | 12000 |
| TLE1502x | | | | Х | 1500 g | 0.01 g | 0.1 g | II | 15000 |
| TLE2002x | | | | Х | 2200 g | 0.01 g | 0.1 g | II | 22000 |
| TLE2502x | | | | Х | 2500 g | 0.01 g | 0.1 g | II | 25000 |
| TLE3002x | | | | Х | 3200 g | 0.01 g | 0.1 g | II | 32000 |
| TLE3502x | | | | Х | 3500 g | 0.01 g | 0.1 g | II | 35000 |
| TLE4001x | | | | Х | 4200 g | 0.1 g | 0.1 g | II | 42000 |
| TLE4002x | | | | Х | 4200 g | 0.01 g | 0.1 g | II | 42000 |
| TLE4502x | | | | Х | 4500 g | 0.01 g | 0.1 g | II | 45000 |
| TLE5002x | | | | Х | 5200 g | 0.01 g | 0.1 g | II | 52000 |

Note: * indicates models that were evaluated for family approval.

x = non-metrological can be "E" or blank.

/A indicates Legal for Trade version

<u>Sealing</u>: The scale will be sealed with a self-destructive seal and plug over the opening on the back of the instrument to prevent access to the calibration switch. Additionally, a physical wire or self-destructive paper seal is applied to seal the top and bottom enclosure preventing access to the calibration switch. See sealing photos on last page.

Operation: Models with FACT have a fully automatic feature that internally re-calibrates the scale if temperature changes enough to affect accurate weighing or periodically after a predetermined time.

<u>Test Conditions</u>: This Certificate supersedes Certificate of Conformance 12-105A2 and is issued to define the Legal for Trade model in the table. Models identified with /A are Legal for Trade applications. The models with /A are metrological equivalent to models currently listed in the above table. No additional testing was deemed necessary. Previous test results are listed below.

<u>Certificate of Conformance Number 12-105A2</u>: This Certificate supersedes Certificate of Conformance 12-105A1 and is issued to correct a model name in the table. The correct model name is JE203Gx. Previous test conditions are listed below for reference.

<u>Certificate of Conformance Number 12-105A1</u>: This Certificate supersedes Certificate of Conformance 12-105 and is issued to include additional model capacities. A model ME503x (520 g x 0.01 g) and a model ME5002x (5200 g x 0.1 g) were submitted for evaluation. The emphasis of the evaluation was on operation, performance, and compliance with influence factor requirements. Tests to verify compliance with zero, zone of uncertainty and motion detection requirements were performed. Several increasing/decreasing and shift tests were performed. The scales were tested over temperature range of 10 °C to 30 °C (50 °F to 86 °F). Voltage variation tests were also performed using 100 VAC and 240 VAC. The load cell and mounting configuration has been previously evaluated under NTEP CC 07-050 and 12-045 for device permanence.

<u>Certificate of Conformance Number 12-105</u>: The emphasis of the evaluation was on device design, operation, performance, and compliance with influence factor requirements. Tests to verify compliance with zero, zone of uncertainty and motion detection requirements were performed. A checklist was completed and several increasing/decreasing and shift tests were performed. The various scales (see Identification section note) were tested over specific temperature ranges as listed in Standard Features and Options. The load cell and mounting configuration has been previously evaluated under NTEP CC 07-050 and 12-045 for device permanence. Voltage variation tests were also performed using 100 VAC and 240 VAC.

Evaluated By: J. Morrison (OH) 12-105; J. Gibson (OH) 12-105A1

Type Evaluation Criteria Used: *NIST Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices,* 2019 Edition. *NCWM Publication 14 Measuring Devices,* 2018 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) 12-105, 12-105A1, 12-105A2; D. Flocken (NCWM) 12-105A3



Non-Computing Scale / ME Series, JE Series, TLE Series and PHE Series

Examples of Device:



Sealing:

Self-destructive seals:

Seal on back of enclosure to prevent access to calibration switch.









Non-Computing Scale / ME Series, JE Series, TLE Series and PHE Series

Seal on bottom of enclosure to prevent separation of enclosure.

