NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:
Non-Computing Scale
Digital Electronic
Model: FX Series (see table on page 2)
n_{max}: 32 000
e_{min}: see table on page 2
Capacity: see table on page 2
Platform: see table on page 2
Accuracy Class: II

***Submitted By: Contact Info. Updated December 2019**
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Standard Features and Options

The FX Series has the following externally selectable units of measure using the "mode" push button: gram (g), ounce (oz), pound (lb), troy ounce (oz t), metric carat (ct), pennyweight (dwt), grain (gr).

"The counting feature is legal for prescription use only."

Standard Features:

- Percent weighing
- Semi-automatic (push-button) Zero
- Automatic Zero Tracking (AZT)
- RS-232 Serial Interface
- AC/DC Adapter
- Level Indicator
- Vacuum Fluorescent Display/ New (FX) models have an LCD screen.
- Weight Comparator Mode
- Tare function
- USB (standard on FX, optional on FXi)

Temperature Range: 10 ºC to 30 ºC (50 ºF to 86 ºF)

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.

Marc Paquette
Chair, NCWM, Inc.

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Issued: August 23, 2024

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Non-Computing Scale / FX Series

Model	Capacity (g)	n_{max}	e (g)	d (g)	pan diameter (mm)
FX-120iN	122 g	12 200	0.01 g	0.001 g	130
FX-120i-P	122 g	12 200	0.01 g	0.001 g	130
FX-120iWPN	122 g	12 200	0.01 g	0.001 g	130
FX-120iWP-P	122 g	12 200	0.01 g	0.001 g	130
FX-120GD	122 g	12 200	0.01 g	0.001 g	130
FX-123N	122 g	12 200	0.01 g	0.001 g	130
FX-123WPN	122 g	12 200	0.01 g	0.001 g	130
FX-200iN	220 g	22 000	0.01 g	0.001 g	130
FX-200i-P	220 g	22 000	0.01 g	0.001 g	130
FX-200iWPN	220 g	22 000	0.01 g	0.001 g	130
FX-200iWP-P	220 g	22 000	0.01 g	0.001 g	130
FX-200GD	220 g	22 000	0.01 g	0.001 g	130
FX-223N	220 g	22 000	0.01 g	0.001 g	130
FX-223WPN	220 g	22 000	0.01 g	0.001 g	130
FX-300iN	320 g	32 000	0.01 g	0.001 g	130
FX-300i-P	320 g	32 000	0.01 g	0.001 g	130
FX-300WPN	320 g	32 000	0.01 g	0.001 g	130
FX-300iWP-P *	320 g	32 000	0.01 g	0.001 g	130
FX-300GD	320 g	32 000	0.01 g	0.001 g	130
FX-323N	320 g	32 000	0.01 g	0.001 g	130
FX-323WPN	320 g	32 000	0.01 g	0.001 g	130
FX-1200iN	1 220 g	12 200	0.1 g	0.01 g	150
FX-1200i-P	1 220 g	12 200	0.1 g	0.01 g	150
FX-1200iWPN	1 220 g	12 200	0.1 g	0.01 g	150
FX-1200iWP-P	1 220 g	12 200	0.1 g	0.01 g	150
FX-1200iGD	1 220 g	12 200	0.1 g	0.01 g	150
FX-1202N	1 220 g	12 200	0.1 g	0.01 g	150
FX-1202WPN	1 220 g	12 200	0.1 g	0.01 g	150
FX-2000iN	2 200 g	22 000	0.1 g	0.01 g	150
FX-2000i-P	2 200 g	22 000	0.1 g	0.01 g	150
FX-2000iWPN	2 200 g	22 000	0.1 g	0.01 g	150
FX-2000iWP-P	2 200 g	22 000	0.1 g	0.01 g	150
FX-2000GD	2 200 g	22 000	0.1 g	0.01 g	150
FX-2202N	2 200 g	22 000	0.1 g	0.01 g	150
FX-2202WPN	2 200 g	22 000	0.1 g	0.01 g	150
FX-3000iN	3 200 g	32 000	0.1 g	0.01 g	150
FX-3000i-P	3 200 g	32 000	0.1 g	0.01 g	150
FX-3000iWPN*	3 200 g	32 000	0.1 g	0.01 g	150
FX-3000iWP-P	3 200 g	32 000	0.1 g	0.01 g	150
FX-3000GD	3 200 g	32 000	0.1 g	0.01 g	150
FX-3202N	3 200 g	32 000	0.1 g	0.01 g	150
FX-3202WPN	3 200 g	32 000	0.1 g	0.01 g	150
FX-300CT	62 g	32 200	0.02 g	0.002 g	90
FX-600CT	122 g	12 200	0.01 g	0.001 g	90

*** Models Tested**

P = Prescription Scale with Counting Feature **WP-P** = Moisture and Dustproof and Prescription Scale with Counting Feature, **GD** = Grams Only Feature Weighing **CT** = Jewelry Scale with Carat and Grams Only Feature**, I, N, and WPN** = are marketing identifiers with no metrological significance

A&D Engineering, Inc.

Non-Computing Scale / FX Series

Application: General purpose top loading balance. The FX Series of balances are suitable for use in any class II direct or indirect applications. The FX-xxxiWP-P is suitable for prescription weighing and counting. The model FX-xxxCT is suitable for carat and grams weighing only.

Identification: The device markings are on a pressure sensitive, tamper evident label located on the right side of the scale, the appropriate capacity x division markings are adjacent the weight display

Sealing: The device can be sealed by threading a wire security seal through two screws on the RS-232 serial interface plate and scale housing. This prevents access to the calibration switch inside the device.

Test Conditions: This Certificate supersedes Certificate of Conformance 08-045A5 and is issued to add new models the have an LCD screen in place of the VFD and come standard with USB capabilities in addition to existing RS232. Models FX-123WPN and FX-3202N were evaluated. Both Models were subjected to several increasing and decreasing, discrimination and eccentricity tests were performed. Devices were evaluated for level and off level suitability. Devices were evaluated in temperature range from 10 °C to 30 °C. (50 °F to 86 °F). Previous test conditions are listed below for reference.

Certificate of Conformance Number 08-045A5: This Certificate supersedes Certificate of Conformance Number 08-045A4 and was issued without additional testing to reactivate Certificate of Conformance 08-045A4 without lapse and to update company contact information. Previous test conditions are listed below for reference.

Certificate of Conformance Number 08-045A4: This Certificate supersedes Certificate of Conformance 08-045A3 and is issued to add tare capability, add the zero function to the on/off button and add a selectable sealable resolution of e=d or e=10d to make the FX series comply with direct and indirect sales. Several increase, decrease and discrimination tests were performed in e=d and e=10d mode. Tare was evaluated in e=d and e=10d for correct functionality. Previous test conditions are listed below for reference.

Certificate of Conformance Number 08-045A3: This Certificate supersedes Certificate of Conformance 08-045A2 and is issued to clarify the model designations covered by the certificate. Changes made to model designations for marketing reasons led to confusion of the model numbers stated on the certificate. The (*) on the model FX-3000iWPN was added to this model in this amendment as the actual model description was changed since the original evaluation. No metrological changes have been made to the models stated on this certificate. Previous test conditions are listed below for reference.

Certificate of Conformance Number 08-045A2: This Certificate supersedes Certificate of Conformance 08-045A1 and is issued to add 12 new model designations ending with a suffix "N" or "WPN". All models were added without additional testing based on information supplied by the manufacturer indicating that this is a change of model numbers not a new design. The N and WPN suffixes have no metrological significance. Previous models remain listed on the certificate to recognize devices previously manufactured. Previous test conditions are listed below for reference.

Certificate of Conformance Number 08-045A1: This Certificate supersedes Certificate of Conformance 08-045 and is issued to add 20 new models. All models were added without additional testing based on information supplied by the manufacturer.

Certificate of Conformance Number 08-045: A FX-300i WP-P and FX-3000iWP were submitted for evaluation. The emphasis of the evaluation was on device design, general performance, print function and compliance with influence factor requirements. Several increasing/decreasing load and shift tests were conducted. Each scale was tested over a voltage range of 100VAC to 130 VAC and at a DCV of 5 VDC to 13.2 VDC. Influence factor tests were conducted over a temperature range of 10°C to 30°C (50°F to 86°F). Additionally, a load of one-half capacity was placed on each scale more than 100 000 times. The device was tested for accuracy and functionality. Results of the evaluation indicate the devices comply with applicable requirements.

Evaluated By: S. Boyd (CA) 08-045; S. Muñoz (CA) 08-045A1; J. Gibson (OH) 08-045A; J. Gibson (NCWM) 08-045A5 (CN11029); J. Coffey (OH) 08-045A6 (CN 10658)

Type Evaluation Criteria Used *Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, 2024 Edition. *NCWM Publication 14: Weighing Devices*, 2024 Edition

A&D Engineering, Inc.

Non-Computing Scale / FX Series

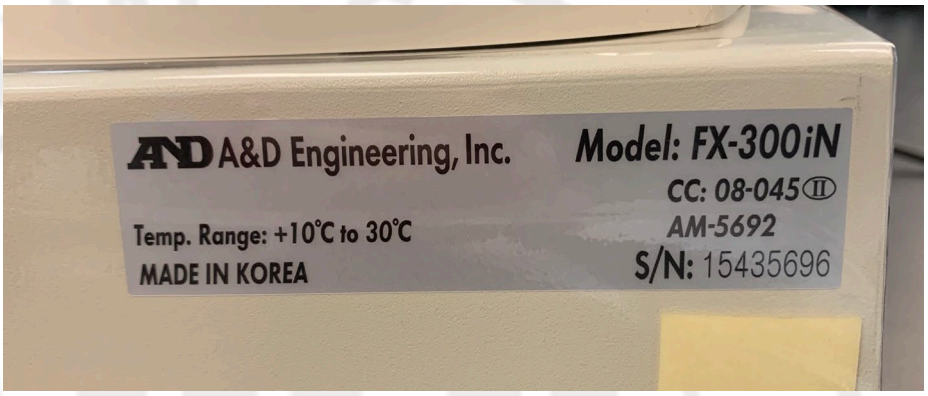
Conclusion: The results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements.

Information Reviewed By: S. Patoray, L. Bernetich (NCWM) 08-045; J. Truex (NCWM) 08-045A1, 08-045A2; D. Flocken (NCWM), 08-045A3, 08-045A4, 08-045A5, 08-045A6

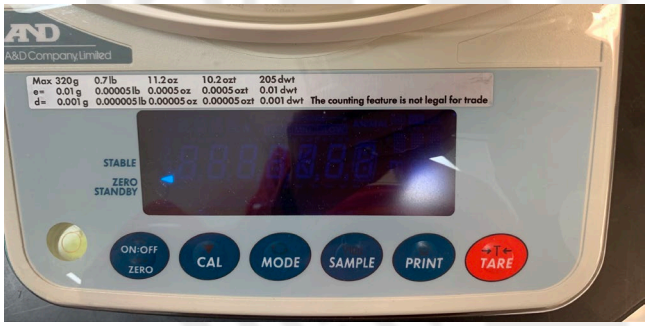
Examples of Device:



Model FX-300iN – Front View



Model FX 300iN – Side View of Markings label



Display with e=10d markings and function buttons



Model FX 3000iWP-P – Calibration Plate and Screws View

Max	320 g	0.7 lb	11.2 oz	10.2 ozt	205 dwt	
e=	0.01 g	0.00005 lb	0.0005 oz	0.0005 ozt	0.01 dwt	
d=	0.01 g	0.00005 lb	0.0005 oz	0.0005 ozt	0.01 dwt	The counting feature is not legal for trade

e=d labeling when used for legal for trade direct and indirect class II applications.