

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

**For:**

Non-Computing Scale  
Bench Scale, Top Loading Balance  
Digital Electronic  
Models: EK<sub>i</sub> and EW<sub>i</sub> Series  
 $n_{\max}$  and  $e_{\min}$  (See Table on Page 2)  
Platform: 133 x 170 (mm)

Accuracy Class: II/III

**Submitted by:**

A&D Engineering  
1555 McCandless Drive  
Milpitas, CA 95035  
Tel: (408) 263-5333  
Fax: (408) 263-0119  
Contact: Jesus Zapien

**Standard Features and Options**

Externally selectable units of measure using the "mode" push-button: gram (g), ounce (OZ), ounce troy (ozt), pound (lb), pennyweight (dwt), carat (ct), and grain (GN)

A label stating, "The counting feature is not legal for trade" is attached near the weight display.

Semi-automatic zero setting mechanism (push-button)  
Automatic zero setting mechanism (AZSM)  
Initial zero setting mechanism (IZSM)  
AC/DC adapter  
Motion annunciator  
Weight comparator relay output


Net display indication  
Counting and percent weighing  
RS-232 serial interface  
Level indicator  
L.C.D. (liquid crystal display)

**Options:** Rechargeable battery pack. A low battery indication ("lb0") replaces the weight display when the battery is below its normal operating voltage.  
Models in the EW series may be configured as a multi-interval or single range device.

Load cells used: A&D Model: LC140-12K; For the EK-12Ki, EK-6000i, EW-12Ki models (non-NTEP)  
LC140-3000; For the EK-600i, EK-1200i, EW-1500i models (non-NTEP)

Temperature Range: 5 °C to 40 °C (41 °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.



Dennis E. Ehrhart  
Chairman, NCWM, Inc.



Ross J. Andersen  
Chairman, National Type Evaluation Program Committee

Issued Date: February 19, 2004

Note: The National Conference on Weights and Measures 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.

**A&D Engineering**  
**Non-Computing Scale**  
**Bench Scale, Top Loading Balance**  
**Models: EK and EW Series**

Model	Capacity (g)	$n_{\max}$	d (g)	Class
EK-600i	600	6 000	0.1	III
EK-1200i	1 200	12 000	0.1	II
EK-6000i	6 000	6 000	1	III
EK-12Ki	12 000	12 000	1	II
EW-1500i	1 500	3 000	0.5	III
EW-12Ki	12 000	2 400	5	III
EW-1500i Multi-interval configuration	300	3 000	0.1	III
	600	3 000	0.2	
	1 500	3 000	0.5	
EW-12Ki Multi-interval configuration	3 000	3 000	1	III
	6 000	3 000	2	
	12 000	2 400	5	

**Application:** General purpose top loading balances. The counting feature is not legal for trade.

**Identification:** The manufacturer's identification, model number, and serial number are on a pressure sensitive, self-destructive label located on the right side of the scale.

**Sealing:** The device may be sealed by threading a wire security seal through a tab on the calibration switch access plate and a tab on the scale housing. The access plate is located on the back of the scale and prevents access to the calibration push-button switch inside.

**Test Conditions:** Models EK-1200i, EK-12Ki, and EW-12Ki were submitted for evaluation. The emphasis of the evaluation was on device design and performance. Each scale was tested over a voltage range of 100 VAC to 130 VAC, including from 5.8 VDC to 8.25 VDC. Influence factor tests were conducted over a temperature range of 5 °C to 40 °C (41 °F to 104 °F). Several printing functions were tested utilizing the RS-232 serial port. Additionally, a load of one-half capacity was placed on each scale more than 100 000 times. Tests were repeated periodically per requirements.

The results of the evaluations and information provided by the manufacturer indicate the devices comply with applicable requirements.

**Type Evaluation Criteria Used:** NIST Handbook 44, 2004 Edition; NCWM Publication 14, 2003 Edition

**Tested By:** Dan Parks (CA)

**Information Reviewed By:** Patoray (NCWM), L. Bernetich (NCWM)