

## Scope of Accreditation For Data Weighing Systems

2100 Landmeier Road  
Elk Grove, IL 60007  
David Hussar  
847-437-4446

In recognition of a successful assessment to ISO/IEC 17025:2005, accreditation is granted to **Data Weighing Systems** to perform the following **Calibrations**:

Accreditation granted through: **June 21, 2010**

### Calibration

#### Mass – Scale and Balances

Calibration Parameter/Equipment <sup>1</sup>	Range	Best Measurement Capability(+/-) <sup>2</sup>	Remarks
Micro-Balances (0.1 µg resolution) (1 µg resolution) (10 µg resolution)	(0 to 2.1) g (0 to 31) g (0 to 230) g	0.003 mg 0.028 mg 0.1 mg	Method tolerances according to DWS procedures using ASTM class 1 weights
Analytical Balances (0.1 mg resolution)	(0 to 610) g	1.93 mg	
Top Loading-Balances (1 mg resolution) (10 mg resolution) (0.1 g resolution) (1 g resolution)	(0 to 1200) g (0 to 10 000) g (0 to 64) kg (0 to 150) kg	4.6 mg 0.041 g 0.32 g 2.63 g	
Bench Scales (0.001 lb resolution) (0.01 lb resolution)	(0 to 50) lb (0 to 300) lb	0.0046 lb 0.035 lb	Method tolerances according to DWS procedures using ASTM class F weights

Calibration Parameter/Equipment <sup>1</sup>	Range	Best Measurement Capability(+/-) <sup>2</sup>	Remarks
Floor Scales, Tanks and Hoppers (0.1 lb resolution) (1 lb resolution) (10 lb resolution)	(0 to 3 000) lb (0 to 15 000) lb (0 to 40 000) lb	0.3 lb 2.61 lb 25.84 lb	Method tolerances according to DWS procedures using ASTM class F weights
Crane and hanging scales (1 lb resolution)	(0 to 5 000) lb	1.65 lb	
Crane and hanging scales (1 lb resolution) (10 lb resolution)	(0 to 5 000) lb (0 to 50 000) lb	4.24 lb 43.1 lb	Method tolerances according to DWS procedures using reference load cell
Weigh Pads & Load Cells (1 lb resolution) (10 lb resolution)	(0 to 5 000) lb (0 to 50 000) lb	4 lb 60.9 lb	

**Mass – Force**

Calibration Parameter/Equipment	Range	Best Measurement Capability(+/-) <sup>2</sup>	Remarks
Force gauges and sensors used in force measurement applications <sup>1</sup>	(0 to 1000) lbf	0.14 % of Full Scale	Method tolerances according to DWS procedures using ASTM class F weights
	(0 to 50 000) lbf	0.035 % of Full Scale	Method tolerances according to DWS procedures using reference load cell
	(0 to 250 000) lbf	0.344% of Full Scale	

**Mass – Mass Standards**

Calibration Parameter/Equipment	Range	Best Measurement Capability(+/-) <sup>2</sup>	Remarks
Class F lb weights	50 lb	217.6 mg	Comparison of Unknown Mass to a Known Mass ASTM E-617 Class-4 Weights
	25 lb	108.7 mg	
	20 lb	106.1 mg	
	10 lb	32.9 mg	
	5 lb	29.9 mg	
	2 lb	3.6 mg	
	1 lb	2.6 mg	
	0.5 lb	1.9 mg	
	0.25 lb	0.55 mg	
	0.2 lb	0.46 mg	
	0.125 lb	0.5 mg	
	0.1 lb	0.47 mg	
	0.05 lb	0.13 mg	
	0.02 lb	0.09 mg	
0.01 lb	0.09 mg		

Calibration Parameter/Equipment	Range	Best Measurement Capability(+/-) <sup>2</sup>	Remarks
Class F kg weights	25 000 g	220.63 mg	Comparison of Unknown Mass to a Known Mass ASTM E-617 Class-4 Weights
	10 000 g	107.1 mg	
	5 000 g	33.72 mg	
	2 000 g	29.68 mg	
	1 000 g	3.86 mg	
	500 g	2.4 mg	
	200 g	0.73 mg	
	100 g	0.55 mg	
	50 g	0.24 mg	
	30 g	0.16 mg	
	20 g	0.12 mg	
	10 g	0.1 mg	
	5 g	0.09 mg	
	3 g	0.11 mg	
2 g	0.08 mg		
1 g	0.08 mg		

**Mass – Torque**

Calibration Parameter/Equipment	Range	Best Measurement Capability(+/-) <sup>2</sup>	Remarks
Torque Transducers	(0 to 1 000) lbf	0.185 % of Full Scale	Method tolerances according to DWS procedures using ASTM class F Weights and reference wheel/arm standards
Torque Hand Tools	(0 to 1 000) lbf	0.844 % of Full Scale	Method tolerances according to DWS procedures using reference transducers, or ASTM class F weights and reference wheel/arm standards

**Notes:**

- 1) Laboratory offers calibration services at the laboratory's own facilities and at the client or other agreed upon facilities. Laboratory has ability to perform force up to 300 lb onsite.
- 2) Best uncertainties represent expanded uncertainties at approximately the 95% confidence level using a coverage factor of k=2.

Approved by:  Date: September 29, 2009

R. Douglas Leonard  
Chief Technical Officer