

# MODEL 3430 SURFACE MOISTURE-DENSITY GAUGE

## Specifications

<b>Measurement (U.S. Customary Units)</b>			
<b>Direct Transmission Density (6")</b>	<b>15 sec.</b>	<b>1 min.</b>	<b>4 min.</b>
Precision at 120 pcf	±0.42 pcf	±0.21 pcf	±0.11 pcf
Composition error at 120 pcf	±1.25 pcf	±1.25 pcf	±1.25 pcf
Surface error (0.05", 100% Void)	-1.1 pcf	-1.1 pcf	-1.1 pcf
<b>Backscatter (98%) (4")</b>			
Precision at 120 pcf	±1.00 pcf	±0.50 pcf	±0.25 pcf
Composition error at 120 pcf	±2.50 pcf	±2.50 pcf	±2.50 pcf
Surface error (0.05", 100% Void)	-4.7 pcf	-4.7 pcf	-4.7 pcf
<b>Moisture at 15 pcf</b>			
Precision at 15 pcf	±0.64 pcf	±0.32 pcf	±0.16 pcf
Surface error (0.05", 100% Void) Depth of measurement @ 15 pcf (8.45")	-1.12 pcf	-1.12 pcf	-1.12 pcf
<b>Measurement (S.I. Units)</b>			
<b>Direct Transmission Density-150mm</b>	<b>15 sec.</b>	<b>1 min.</b>	<b>4 min.</b>
Precision at 2000 kg/m <sup>3</sup>	±6.8 kg/m <sup>3</sup>	±3.4 kg/m <sup>3</sup>	±1.7 kg/m <sup>3</sup>
Composition error at 2000 kg/m <sup>3</sup>	±20.0 kg/m <sup>3</sup>	±20.0 kg/m <sup>3</sup>	±20.0 kg/m <sup>3</sup>
Surface error (1.25mm, 100% Void)	-17.0 kg/m <sup>3</sup>	-17.0 kg/m <sup>3</sup>	-17.0 kg/m <sup>3</sup>
<b>Backscatter (98%) (100mm)</b>			
Precision at 2000 kg/m <sup>3</sup>	±16.0 kg/m <sup>3</sup>	±8.0 kg/m <sup>3</sup>	±4.0 kg/m <sup>3</sup>
Composition error at 2000 kg/m <sup>3</sup>	±40.0 kg/m <sup>3</sup>	±40.0 kg/m <sup>3</sup>	±40.0 kg/m <sup>3</sup>
Surface error (1.25mm, 100% Void)	-75.0 kg/m <sup>3</sup>	-75.0 kg/m <sup>3</sup>	-75.0 kg/m <sup>3</sup>
<b>Moisture</b>			
Precision at 250 kg/m <sup>3</sup>	±10.3 kg/m <sup>3</sup>	±5.1 kg/m <sup>3</sup>	±2.6 kg/m <sup>3</sup>
Surface error (1.25mm, 100% Void) Meas. Depth @ 250 kg/m <sup>3</sup> - 212.5mm	-18.0 kg/m <sup>3</sup>	-18.0 kg/m <sup>3</sup>	-18.0 kg/m <sup>3</sup>
<b>Calibration</b>			
Accuracy of Density Standards	±0.2%		
Accuracy of Moisture Standards	±2.0%		
Calibration Range	70-170 pcf (1100-2700 kg/m <sup>3</sup> ) Density 0-40 pcf (0-640 kg/m <sup>3</sup> ) Moisture		

<b>Radiological</b>	
Gamma Source	8 mCi $\pm$ 10% Cs-137
Neutron Source	0.060 mCi $\pm$ 10% Cf-252 or 40 mCi $\pm$ 10% Am-241:Be
Source Housing	Stainless Steel Encapsulation
Shielding	Tungsten, lead and cadmium
Surface Dose Rates	20.5 mrem/hr max., neutron and gamma
Source Rod Material	Stainless Steel
Shipping Case	DOT 7A, Type A
Sealed Source Approved for Domestic and International Shipments	Special Form

### **Mechanical**

Case	High Impact Plastic 29.5 L x 14 W x 17 T in.
Vibration Test	0.1 in. (2.5 mm) @ 12.5 hz
Drop Test	300 mm on 25 mm diameter steel ball
Operating Temp:	Ambient: 14 to 158°F (-10 to 70°C) Surface: 350°F (175°C)
Storage Temp.	-70 to 185°F (-55 to 85°C)
Gauge Size (no handles)	14.8 x 9.1 x 7.2 in. (376 x 231 x 183 mm)
Gauge Height (with handles)	12": 23.25 in. (591 mm) 8": 19.25 in. (489 mm)
Weight	29 lbs. (13.2 kg)
Shipping Weight	90 lbs. (40.8 kgs) w/case
Available Models	8" or 12" index rod with 1" or 2" increments (200 or 300 mm index rod with 25 or 50 mm increments)

### **Electrical**

Time Accuracy and Stability	0.005%, 0.0002% / °C
Power Supply Stability	0.01% / °C
Stored Power	30 watt hours
Battery Recharge Time	14-16 hours (automatic cutoff)
Charger	110/220 V ac, 50-60 Hz or 12-14 V dc
Readout	2 x 16 alpha-numeric liquid crystal display

### **Notes:**

Gauge returns to Gauge Ready (power saving mode) after two minutes of inactivity, except in standard, stat test, drift test, and in nomograph programs when a 30-minute delay is provided. After 5 hours of inactivity, gauge performs complete power shut-down.

Battery packs are fully protected against overcharge and overdischarge.

Emergency Use - Capable of operation with D size alkaline batteries.