



Model HS-5001B

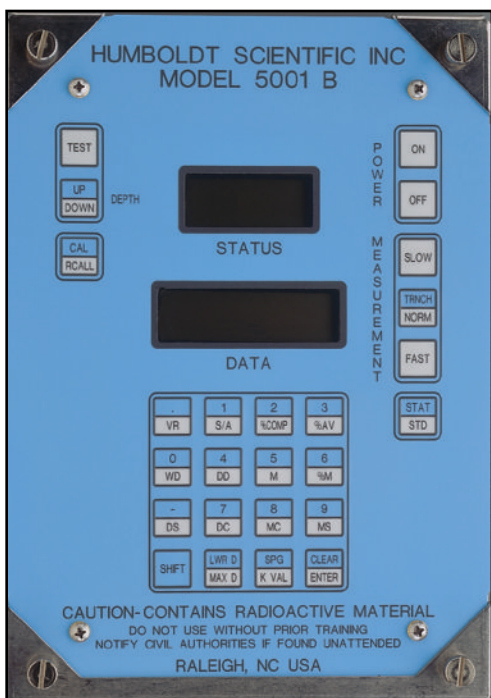
A state of the art compaction control gauge featuring a totally enclosed and sealed automatic indexing mechanism.

The HS-5001B provides an accurate read-out of the measurement depth while keeping abrasive dirt or other debris out of the mechanism itself.

Six convenient, easily replaced size AA alkaline batteries last up to 2000 hours of operation. Other features include:



- Built-in test routines
- Trench wall moisture correction
- Nomograph method for thin lift asphalt measurements
- Five block calibration method - No short cuts
- Indexing mechanism is specially designed for positive, precise and repeatable source positioning
- Durable bronze bearings reduce source rod lateral movement
- Rugged, precision-machined base from solid 6061-T6 aluminum, unlike castings will never warp from casting stress
- Meets and exceeds ASTM test methods D2922, D3017, D2950, C1040 and AASHTO T238, T239



HS-5001B SPECIFICATIONS

MEASUREMENT

DENSITY AT 2000 kg/m ³ (125 pcf) BACKSCATTER DENSITY		SLOW (4 min)	NORM (1 min)	FAST (15 sec)
Precision	kg/m ³ (pcf)	±4 (0.25)	±8 (0.5)	±16 (1.0)
Chemical Error	kg/m ³ (pcf)	±40 (2.5)	±40 (2.5)	±40 (2.5)
Surface Error	kg/m ³ (pcf)	-48 (3.0)	-48 (3.0)	-48 (3.0)
Depth	mm (inch)	88 (3.5)	88 (3.5)	88 (3.5)

DIRECT TRANSMISSION DENSITY AT 150mm (6 INCH)		SLOW (4 min)	NORM (1 min)	FAST (15 sec)
Precision	kg/m ³ (pcf)	±2 (0.13)	±4 (0.25)	±8 (0.5)
Chemical Error	kg/m ³ (pcf)	±16 (1.0)	±16 (1.0)	±16 (1.0)
Surface Error	kg/m ³ (pcf)	-8 (3.0)	-8 (3.0)	-8 (3.0)
Depth	mm (inch)	50 to 300 (2 to 12)	50 to 300 (2 to 12)	50 to 300 (2 to 12)

MOISTURE AT 160 kg/m ³ (10 pcf)		SLOW (4 min)	NORM (1 min)	FAST (15 sec)
Precision	kg/m ³ (pcf)	±2 (0.13)	±4 (0.25)	±8 (0.5)
Surface Error	kg/m ³ (pcf)	-4 (0.25)	-4 (0.25)	-4 (0.25)
Depth	mm (inch)	100 to 200 (4 to 8)	100 to 200 (4 to 8)	100 to 200 (4 to 8)

RADIOLOGICAL

Gamma Source	
Amount and type of Material	370MBq (10mCi) ±10% Cs-137
Special form Registration	GB/24/S
ANSI and ISO class	C64444
Neutron Source	
Amount and type of Material	1.48GBq (40mCi) ±10% Am-241:Be
Neutron Yield	90 Knps ± 10%
Special form Registration	GB/7/S
ANSI and ISO class	E65455
Source	
Type	Sealed Source - Special Form
Housing	Stainless steel double encapsulated
Surface Dose Rates	18.7 mrem/hr maximum (neutron and gamma)
Transit (shipping) case	DOT 7A, Type A, Yellow II Label, 0.2 TI

ELECTRICAL

Displays (two)	4 and 6 digits LCD
Timer Stability	0.01%
Power Supply Stability	0.10%
Power Source	Six alkaline AA size batteries
Power Consumption	
Processor	
Nonactive	1 mA
Active	4.5 mA
Battery life	2000 hours
Power Protection	
Main Batteries	Circuit Breaker
Regulated Supplies	Short Circuit Proof
Low Battery Condition	LOBAT Alarm and Auto Shutoff for low and dead battery conditions
Battery Life Remaining	Automatically estimated at power up, by activating TEST routine.

MECHANICAL

Materials	
Shielding	Tungsten powder alloy
Source Rod	440C Stainless Steel, induction heat treated to 55 Rockwell C
Gauge Base	Computer machined 6061-T6 Aluminum, hard coated and Teflon impregnated.
Post and Frames	Computer machined 6061-T6 Aluminum, anodised for anticorrosion.
Index Rod	7075 Aluminium, hard coated and Teflon impregnated.
Top Shell	Injection Molded Noryl with integral color
Bearing	Relieved bronze with neoprene seals.
Screws/fittings	Stainless/brass, no steel.
Operating Temperature	10 ⁰ C to 70 ⁰ C ambient, 175 ⁰ C Test Material Surface
Storage Temperature	55 ⁰ C to 85 ⁰ C
Humidity	98% without condensation, Rain resistant construction
Vibration	2.5 mm (0.1 in) at 12.5 Hz



GAUGE

Size (excluding handle)	400 x 220 x 140 mm (15.75 x 8.66 x 5.5 inch)
Height (with handle)	450 or 550 mm (18 or 21.6 inch)
Weight	13.6 Kg (30 lbs)
Reference Standard	
Size	350 x 200 x 75 mm (25 x 7.8 x 3 inch)
Weight	4.5 Kg (10 lbs)
Transit Case	
Size	600 x 356 x 495 mm (26 x 14 x 19.5 inch)
Weight	11.8 Kg (26 lbs.)
Accessory Case (loaded)	
Size	500 x 250 x 125 mm (19.7 x 9.8 x 5 inch)
Weight	7.3 Kg (16 lbs)
Total Shipping Weight	41Kg (89 lbs.)

Accessories Furnished

Transit Case • Reference Standard
 Operator's Manual • Radiation Safety Manual
 Source and Case Certification • Wipe Test Kit
 Zippered Accessory Case • Rod Guide/Scraper Plate
 Drill Rod • Four Pound Hammer
 Rod Extraction Tool

Information for License Application

Radioactive Material	Chemical/Physical Form	Maximum Amount
Cesium-137	Sealed Source Humboldt 2200064	Not to exceed 11 millicuries per source
Americium-241:Be	Sealed Source Humboldt 2200067	Not to exceed 44 millicuries per source

For use in Humboldt Scientific, Inc. Model 5001 Series Compaction Control Gauge to measure the moisture content and density of construction materials

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