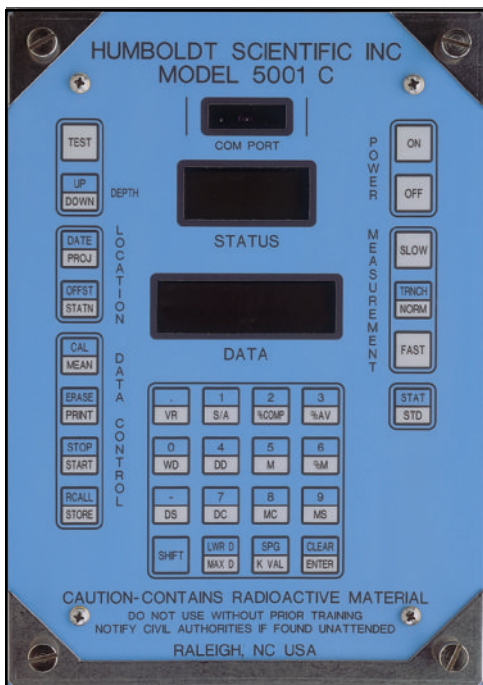




Model HS-5001C

Humboldt HS-5001C compaction control gauge features storage capability of up to 320-field tests transferable to a computer or a printer via an infrared RS-232 data cable. The HS-5001C contains a totally enclosed and sealed automatic indexing mechanism that provides an accurate read-out of the measurement depth while keeping abrasive dirt or other debris out of the mechanism itself.

Other features include:



- Six convenient, easily replaced size AA alkaline batteries last up to 2000 hours of operation
- Data storage of up to 320 field tests
- 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-5001C SPECIFICATIONS

MEASUREMENT

DENSITY AT 2000 kg/m³ (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/m³ (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

Optional Accessory

HS-200313 Infrared RS-232 Data Cable and Software

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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