

Digital Thermometers



H-3558D



H-3538D, H-3540D,
H-3540DC

H-3543



H-3588



H-3585



H-3539D

Digital Thermometers

Type	Description	Range	Model
Electronic Stem	5" long stem. Approximately 1" flat-style-head pocket thermometer features thermistor sensors, 0.25"-high display, 1.5V #392 battery instant update button, auto shut-off, red protective sheath, clip and battery. Accuracy: $\pm 2^{\circ}\text{F}$ (from -4 to 77°F) or $\pm 4^{\circ}\text{F}$ max. over entire range.	-40 - 300°F	H-3538D
		-40 - 450°F	H-3540D
		40 - 230°C	H-3540DC
Min/Max	Reads indoor or outdoor temperatures from indoors. Minimum and maximum temperature memory button displays the high or low temperature. Unit hangs or stands with 1.25" high LCD display. Includes one 1.5V battery.	-58 - 158°F -50 - 70°C	H-3543
Electronic Hand-Held Thermocouple	*Model includes type J thermocouple and incorporates high/low memory feature allowing use of J, K, T or E thermocouples. Six-button sealed membrane keypad allows selection of $^{\circ}\text{F}$ or $^{\circ}\text{C}$, probe type, backlit, memory recall and auto shutoff. Provides $\pm 0.1^{\circ}\text{F}$ or $^{\circ}\text{C}$ resolution from -99.9 to 999.9°F , $\pm 1.0^{\circ}\text{F}$ or $^{\circ}\text{C}$ from $1,000$ to $2,000^{\circ}\text{F}$ (-100 to -400°C). Features 4-digit 0.4" backlit LCD display. Includes stainless steel probe and ABS plastic carrying case. Dimensions: 7x3x1" (177x76x25mm).	*Type J: -100 - $1,400^{\circ}\text{F}$ Type K: -350 - $2,200^{\circ}\text{F}$ Type T: -400 - 750°F Type E: -100 - $1,200^{\circ}\text{F}$	H-3558D
Microprocessor Thermister with Memory & Alarms	Readings in Fahrenheit only. HI & LO keys for memory recall of extreme readings. MEM HOLD & MR buttons to freeze reading in display or future recall. DELTA MEM key to compare actual reading to reference measurement. Alarm functions, large LCD display.	-58 to 302°F	H-3585
Microprocessor Low-Range	High performance thermister-type for field or lab. Switchable from Fahrenheit to Centigrade. Provides $\pm 0.1^{\circ}\text{C}$ resolution (-50 to 150°C), $\pm 0.1^{\circ}\text{F}$ (-58.0 to 199.9°F); $\pm 1^{\circ}\text{F}$ (200 to 302°F). HI & LO memory recall, large display, pre-calibrated interchangeable probes, memory functions, Centigrade or Fahrenheit.	-50 to 150°C -58 to 199°F 200 to 302°F	H-3588
Electronic Stem	Waterproof model, pocket size.	-58 to 338°F -50 to 170°C	H-3539D



NOTE: If no shipping weight is listed, item weighs 5 lbs. or less.

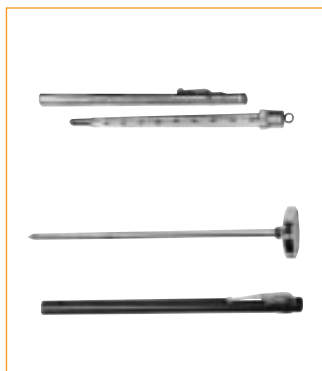
See ASTM and Non-Contact Thermometers on page 27

Thermometers

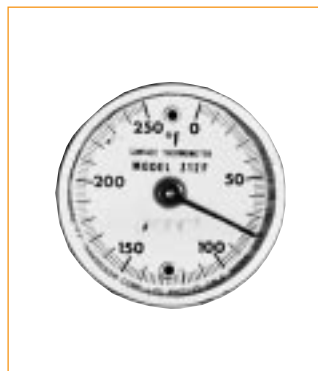


H-3494

H-3590



H-3540 (top), H-3550 (bottom)



H-2628, H-2628H, H-2629



H-2630D Series (top), H-3532

Infrared Non-Contact Temperature Measuring Devices

Basic, value priced, hand held sensors use infrared technology to accurately measure temperature without touching. Safely monitor hot, hazardous, or hard-to-reach materials or surfaces—all without contact, contamination, or damage. Simply aim, press trigger, and read. All models have 3-digit display with hold, selectable in °F or °C.

Note: See page 27 for complete specifications on the following models.

Description	Model
Infrared non-contact temperature measuring device, "remote" type, with standard infrared. Includes belt loop type pouch.	H-3494
Infrared non-contact temperature measuring device, "remote" type, with laser infrared. Includes belt loop type pouch.	H-3496
Infrared non-contact temperature measuring device, "pistol" type.	H-3590

Description, Replacement Parts & Accessories	Model
Pouch with hand strap for H-3590.	H-3592

Pocket-Type Thermometers

Type	Description	Range	Div.	Model
Glass Tube	6" long stem. Large-bore tempered glass tube, filled with non-toxic liquid, includes pocket case and clip.	0 to 220°F	2°F	H-3540
		-20°C to 105°C	1°C	H-3542
	6"-long stem features copper-plated bulb to resist cutting action. Includes pocket case and clip.	100-450°F	5°F	H-2630
		0-120°F	1°F	H-3547
Field/Spot Checking	5" long stem, 1" (25mm) dia. head thermometer has stainless steel case and bezel. Features external adjustment for recalibrating. Includes pocket case and clip.	-40 to 160°F	2°F	H-3550
		0 to 220°F		H-3552
		25 to 125°F	1°F	H-2633
		50 to 500°F	5°F	H-2639
		0 to 150°C	2°C	H-3553
		0 to 250°C	5°C	H-3554

Dual-Scale General Testing Thermometers

Description	Range	Div.	Model
Direct-reading, all metal thermometers for general use include °F and C range. Accuracy .5% full scale. Units have bi-metal element in 8" long x 0.15" dia. (203x4mm) stainless steel stem that actuates pointer over graduated dial. Dial face is 1-3/4" (45mm) dia. External adjustment allows recalibration.	25 to 125°F (0 to 50°C)	1°F .5°C	H-2631D
	0 to 220°F (-10 to 100°C)	2°F 2°C	H-2632D
	50 to 550°F (0 to 287°C)	5°F 2°C	H-2634D

Surface Thermometer

Description	Range	Div.	Model
Sensing element comes into direct contact with surface to be measured. Dial readout results from expansion or contraction of bi-metal. Unit is dual-magnet type, 2" (51mm) dia. x 1/2" (13mm) high.	0 to 250°F	2°F	H-2628
	0 to 500°F	5°F	H-2628H
	-20° to 120°C	1°C	H-2629

General Purpose Dial Thermometer

Description	Range	Div.	Model
Accurate, durable. Features 1" dial, insulated bezel ring, adjustable pen clip, 12" stainless steel stem.	50 to 500°F	5°F	H-3532

Bi-Metal Oven Thermometers

Description	Range	Div.	Model
All-metal unit is 2.3x3.3", rectangular with black baked enamel finish on bezel and frame. Features bi-metal coil movement and glass lens. Hangs or stands.	100 to 600°F (50 to 315°C)	25°F	H-3568

Thermometers, Hygrometer, Timers



H-3560



H-3560D



H-2727



H-2270

Maximum and Minimum Thermometer

Dual-scale thermometer has U-shaped capillary mounted in plastic 8x2-5/8x1" (203x67x25mm) with guard and mounting tab. Ranges -40°F to 120°F in 2°F div. and -40°C to 50°C in 1°C div. Thermometer indicates present, highest and lowest temperature since last indices setting. Indices are easily reset after each reading.

Description	Model
Maximum and minimum thermometer, mercury.	H-3560
Maximum and minimum thermometer, mechanical.	H-3560D

Electric Stopwatch and Timer

Stopwatch/timer is used in viscosity tests and other laboratory and industrial applications. Timer features push-button reset switch, illuminated start-stop switch, electric brake, synchronous motor, cushioned base, steel housing and 3-wire cord. Overall size: 7x4x4" (178x102x102mm).

Description	Model
Electric stopwatch and timer, range from 0.1 to 9999.9 seconds. 120V. 60Hz. AC. 30W.	H-2270
Electric stopwatch and timer, range from 0.1 to 9999.9 seconds. 230V. 50Hz. AC. 30W.	H-2270.5F

Hygrometer

Precision hygrometer has temperature gauge and is accurate within ±3 percent relative humidity from 20 to 85 percent. Unit is tested and calibrated five times in humidity-and-temperature-controlled rooms, monitored by chart recorders. Black metal case is 5-1/4" dia.

Description	Model
Hygrometer.	H-2727

Mercury Spill Clean-up Kit

For recovery and disposal of spills up to 500g. Includes: gloves, two plastic spatulas for cleaning, mercury collector to swab spill, absorbant and activator to absorb mercury, plastic bag for disposal, instructions.

Description	Model
Mercury spill clean-up kit.	H-3632SK

24-Hour Digital Timer Clock

Electronic digital timer/clock is programmed to alarm for one minute when time is up. Unit counts down or up in seconds. LCD displays hours, minutes and seconds. Memory timer allows preset time to be stored. Unit has magnetic back and can also clip on or stand. Includes one 1.5 volt battery.



H-3575

Description	Model
24-Hour digital timer clock.	H-3575



NOTE: If no shipping weight is listed, item weighs 5 lbs. or less.

Timers, Stopwatch



H-4292



H-2260



H-4294



H-4296

Universal Lab Timer

Portable electric timer functions as elapsed-time indicator, interval timer and electrical apparatus on-off timer. Features time range of 60 minutes by minutes and seconds, 8-in. dial with two sets of numerals (use inner circle of small numerals as stop clock) and selective automatic buzzer alarm. Has two separate outlet receptacles for automatic switching of external appliances. Toggle switch controls one outlet, which can make or break circuit at "0." Circuit automatically breaks on second outlet after time interval.

Description	Model
Universal lab timer. 110V. 60Hz. 1ph. AC. 750W	H-4292
Universal lab timer. 220V. 50Hz. 1ph. AC. 375W.	H-4292.5F

Shipping wt. 6 lbs. (2.7kg)

Stopwatch

Used for timing operations and tests, stopwatch is time-out type. Start, stop and restart are activated by depressing the crown. Hands are reset by depressing pin on side of case. Features nickel-chromium case and anti-magnetic shock-resistant 7-jewel movement.

Description	Model
1/5-second movement, 1 revolution of large hand in 60 seconds. Small hand registers up to 30 minutes.	H-2260
1/10-second movement, 1 revolution of large hand in 30 seconds. Small hand registers up to 30 minutes.	H-2261

Bell-Type Timer

Economical manual mechanical timer has 60-minute time range. Signals with clear bell tone at end of set time for manual apparatus shut off.

Description	Model
Bell-type timer.	H-4294

Universal Timer

Portable timer automatically shuts off electrical apparatus at set time up to 60 minutes. Features two receptacles and 3-wire cord and plug.

Description	Model
Universal timer. 125V. 60Hz. 10 amps. 1ph. AC.	H-4296
Universal timer. 220V. 50/60Hz. 10 amps. 1ph. AC.	H-4296.4F



Muffle Furnaces



H-30200



H-30201



H-3746



H-23392, H-23440

Muffle Furnaces

Electric muffle furnaces are designed for laboratory and industrial applications. Used in engineering tests of soils and aggregates, cement testing, ashing organic and inorganic samples, gravimetric analysis, ignition tests, etc. Cases are welded steel construction; perforated base case design keeps benchtop cool. Heating elements are embedded in refractory cement for structural strength and long life.

Furnace is insulated with Insu-Light molded ceramic fiber insulation; a percentage input controller allows desired temperature to be selected with repeatable results. Features fluorescent digital display. Each unit contains a Chromel/Alumel thermo-couple directly connected to 32-2200°F, 0-1200°C dual scale pyrometer. Refer to tables for specifications on models described on this page.

Three-Heating-Element Electric Furnace

Unit contains three heating element surfaces, top and both sides. Unit heats to about 1600°F (871°C) in 40 minutes. Door can be used as a work shelf or be latched in various positions to aid ventilation during burn-out procedures. Includes 3-wire cord and plug. Refer to table for specifications.

Description	Model
Three-heating-element electric furnace, 120V, 50/60Hz.	H-30200
Three-heating-element electric furnace, 230V, 50/60Hz.	H-30200.4F
Three-heating-element electric furnace, 120V, 50/60Hz.	H-30201
Three-heating-element electric furnace, 230V, 50/60Hz.	H-30201.4F

Electric Furnace with Single Setpoint Automatic Controller

Small bench-type muffle furnace has heating elements on both sides of chamber. Unit has high thermal-efficient ceramic insulation surrounding chamber. Maximum operating temperature is 1904°F (1046°C). Door safety interlock disconnects power to heating elements when door is open.

Temperature controller is open loop manual-control type.

Temperature is measured by thermocouple and displayed on analog meter. Includes ceramic shelf and 3/8" port at rear for injection of atmospheres. Chamber dimensions: 5x4-1/2x6"D (12x11x33cm). Refer to table for specifications.

Description	Model
Electric furnace with single setpoint automatic controller, 120V, 50/60Hz.	H-30202
Electric furnace with single setpoint automatic controller, 240V, 50/60Hz.	H-30202.4F

Medium Muffle Furnaces

Heating elements on top, bottom and sides and set in refractory cement increase temperature uniformity. High-efficiency ceramic insulation around chamber maximizes energy efficiency. Features top venting; door safety switch cuts power when door is open. Manual models have dual-scale analog meter. Automatic models feature digital temperature display.

Prepunched ports at rear of furnace allow atmosphere injection; order connection tubing separately. Stainless-steel shelf is optional. H-30204.4F includes cord and plug. See table for complete specifications.

Description	Model
Medium muffle furnace, digital, 230V, 50/60Hz.	H-30204.4F
Medium muffle furnace, single setpoint automatic, 230V, 50/60Hz.	H-30206.4F

Programmable Ashing Furnace

With 14x14x14" chamber, furnace has 1.6 cu. ft. (2,744 cu. in.) of heating area. Unit features high-efficiency ceramic insulation and heating elements on sides, top and bottom of chamber to achieve minimum chamber temperature gradient. Door safety switch cuts power when door is open.

Includes two refractory shelves, 1" dia. top vent and 35-amp circuit breaker to protect unit. Prepunched ports at rear of furnace allow atmosphere injection; order connection tubing separately. See table for complete specifications.

Description	Model
Programmable ashing furnace, 230V, 50/60Hz.	H-30208.4F

Glove/Tongs

Description	Material	Wire Size	Length	Model
Glove	Heat Resistant	—	Full length	H-3746
Crucible tongs	Stainless Steel	1/4" (6mm)	18" (457mm)	H-23392
Safety tongs	Stainless Steel Fiberglass covered jaws	1/4" (6mm)	13.5" (343mm)	H-23440

Muffle Furnaces



H-30202



H-30204.4F, H-30206.4F



H-30208.4F



H-4924,

H-4930

Muffle Furnaces

Controller	Max. Temp. °F (°C)	Chamber and O.D. Dimensions (HxWxD)	Electrical	Shipping Wt. lbs. (kg)	Model
Digital	1904 (1040)	5x4-1/4x6" (127x108x152mm); 10x14-1/2x11" O.D. (254x368x279mm O.D.)	120V, 12.5 amps, 1,500 watts, 50/60 Hz	26 (11.7)	H-30200
			230V, 6.3 amps, 1,500 watts, 50/60 Hz		H-30200.4F
	2192 (1200)	5x6-1/2x10" (127x165x254mm); 19x13-1/4x27" O.D. (482x336x685mm O.D.)	120V, 15 amps, 1,800 watts, 50/60 Hz	60 (27.2)	H-30201
			240V, 7.5 amps, 1,800 watts, 50/60 Hz		H-30201.4F
Single Setpoint Automatic*	1904 (1040)	5x5-1/2x13" (127x139x330mm); 26-1/2x15-1/2x24" (673x381x610mm)	120V, 35 amps, 4,100 watts, 50/60 Hz	197 (89.4)	H-30202
			240V, 17.5 amps, 4,100 watts, 50/60 Hz		H-30202.4F
Digital	1904 (1040)	12.75x10x6.8" (325x254x172mm) 12.1x29.5x21" O.D. (485x749x533mm O.D.)	230V, 10.0 amps, 2,400 watts, 50/60 Hz	110 (50)	H-30204.4F
Single Setpoint Automatic			230V, 18.3 amps, 4,400 watts, 50/60 Hz		H-30206.4F
Single Setpoint Automatic	1999 (1093)	14x14x14" (355x355x355mm) 25.5x21.5x29.5" O.D. (647x546x749mm O.D.)	230V, 22.9 amps, 5,500 watts, 50/60 Hz	110 (50)	H-30208.4F

*Also available with programmable 8 ramp, 8 dwell and RS232 communications port. Call Humboldt for details.

Nickel Evaporating Dishes

Description	Cap.	Top Dia. in. (mm)	Height in. (mm)	Model
Heavy gauge pure nickel dishes have straight sides, flat bottom, pour lip.	40ml	2-1/4 (57)	1 (25)	H-4924.040
	100ml	2-3/4 (70)	1-3/8 (35)	H-4924.100
	200ml	3-3/8 (86)	1-13/16 (46)	H-4924.200
	300ml	3-7/8 (98)	2-1/4 (57)	H-4924.300

Porcelain Evaporating Dishes

Description	Cap.	Top Dia. mm	Height mm	Model
Shallow porcelain dish has pour lip, glazed inside, partly glazed outside.	120ml	90	37	H-4930.120
	250ml	115	45	H-4930.250
	765ml	185	54	H-4930.765
	1,285ml	215	63	H-4930.M1285

For your added convenience, Humboldt accepts American Express, MasterCard and Visa



Ovens



H-30140, H-30145, H-30160.2F

Bench Ovens

Fan-forced-air circulation provides even work space temperature in curing, drying, baking finishes, etc. Unit has 7.8 cu. ft. (220L) capacity and features long-life incoloy-sheathed elements, 2" (51mm) thick mineral wool insulation, steel-lined interior, piano-hinged and gasketed doors, adjustable damper control and an ambient temperature range to 300°F (149°C). Includes two adjustable shelves on 1-1/2" (38mm) centers. Features on-off switch, panelboard, thermostat, heat switch, 3-wire cord and plug. See model chart on page 179.

Description	Model
Forced-air bench oven, 115V, 60Hz.	H-30140
Forced-air bench oven, 230V, 50/60Hz.	H-30140.4F

High-Temperature-Range Bench Oven

With higher ambient temperature range to 437°F (225°C) and 7.8-cu.-ft. (220L) capacity, other features of this unit are the same as H-30140. Models available with calibrated dial-type, or solid state digital temperature controller.

Description	Model
High-temperature-range bench oven, 115V, 60Hz.	H-30145
High-temperature-range bench oven, 230V, 50/60Hz.	H-30145.4F
High-temperature-range bench oven, solid state digital, 115V, 60Hz.	H-30145E
High-temperature-range bench oven, solid state digital, 230V, 50/60Hz.	H-30145E.4F



H-30100



H-30110, H-30120



H-30115

Maximum-Temperature-Range Bench Oven

For curing, drying, baking finishes, etc., oven has 7.2-cu.-ft. (220L) capacity, calibrated dial-type temperature controller, forced-air recirculation, high-low heat switch, pilot light for heat and fan. Cord and plug not furnished; connect through conduit system. Refer to page 179.

Description	Model
Maximum-temperature-range bench oven, 230V, 60Hz.	H-30160.2F

Laboratory Ovens

Quality fan-forced circulation or gravity-convection method ovens feature double-wall construction and heavy welded steel exterior. Low-watt density incoloy-sheathed elements are used. Includes automatic thermocontrol, pilot light heat indicator, mercury thermometer (0°-300°C), two adjustable shelves and 6", 3-wire cord with plug. Also has scratch-proof rubber feet, full-length piano-hinged door and extruded thermoplastic door handle.

See models H-30100, H-30105, H-30110, H-30115, H-30120, H-30125, H-30128, and H-30131 in chart on page 179.

Large Capacity Bench Ovens 25.5x30x24"

10.6 cu. ft. (300L)

Dial-type and solid state digital

Fan forced-air circulation. Same features as H-30145, with even greater volume capacity. See models H-30135, and H-30137 in chart on page 179.



NOTE: If no shipping weight is listed, item weighs 5 lbs. or less.

Ovens

Bench Ovens				
Description	Specifications		Model	
	Maximum Temp.	Inside Dimensions (W x H x D)	Gravity Convection	Forced Air
.7 cu. ft. (20L) capacity. Features bi-metal temperature controller, $\pm 2^\circ$ sensitivity. 115V, 60 Hz. 800 watts minimum. Shipping wt. 50 lbs. (22.6kg)	392°F (200°C)	12x10x10" (305x254x254mm) Overall 14x17x12" (355x431x304mm)	H-30100	H-30105
Same as above, except 230V, 50/60 Hz.			H-30100.4F*	H-30105.4F
1.27 cu. ft. (35L) capacity. Features hydraulic temperature controller, $\pm 1^\circ$ sensitivity. 115V, 60 Hz. 1000 watts minimum. Shipping wt. 60 lbs. (27.2kg)	518°F (270°C)	13x13x13" (330x330x330mm) Overall 20x20-1/2x14" (508x520x355mm)	H-30110	H-30115
Same as above, except 230V, 50/60 Hz.			H-30110.4F*	H-30115.4F*
2 cu. ft. (56L) capacity. Features bi-metal temperature controller, $\pm 2^\circ$ sensitivity. 115V, 60 Hz. 1600 watts min. Shipping wt. 70 lbs. (31.7kg) for H-30120 and 85 lbs. (38.5kg) for H-30125.	392°F (200°C)	18x16x12" (457x406x305mm) Overall 18-3/4x12-3/4x21-1/2" (476x324x546mm)	H-30120	H-30125
Same as above, except 230V, 50/60 Hz. Shipping wt. 70 lbs. (31.7kg) for H-30120.4F and 85 lbs. (38.5kg) for H-30125.4F.			H-30120.4F*	H-30125.4F*
3.5 cu. ft. (98L) capacity. Features hydraulic temperature controller, $\pm 1^\circ$ sensitivity. 115V, 60 Hz 1000 watts min. Shipping wt. 60 lbs. (27.2kg)	437°F (225°C)	18x24x14" (457x609x355mm) Overall 20x33x16" (508x838x406mm)	H-30128	H-30131
Same as above, except 230V, 50/60 Hz.			H-30128.4F	H-30131.4F
7.8 cu. ft. (220L) capacity. Features calibrated dial-type temperature controller, 115V, 60 Hz. 1110 watts min. Shipping wt. 170 lbs. (68kg).	300°F (149°C)	26x20x26" (660x508x660mm) Overall 33x24x32" (838x610x813mm)		H-30140
Same as above, except 230V, 50/60 Hz.				H-30140.4F
Same as H-30140, except high-temperature and wattage. 2110 watts.	437°F (225°C)	26x20x26" (660x508x660mm) Overall 33x24x32" (838x610x813mm)		H-30145
Same as above, except 230V, 50/60 Hz.				H-30145.4F
7.8 cu. ft. (220L) capacity. Features solid state digital temperature controller, 115V, 60 Hz. 2110 watts. Shipping wt. 170 lbs. (68kg).	437°F (225°C)	26x20x26" (660x508x660mm) Overall 33x24x32" (838x610x813mm)		H-30145E
Same as above, except 230V, 50/60 Hz.				H-30145E.4F
7.2 cu. ft. (200L) capacity. Features calibrated dial-type temperature controller, 230V, 60 Hz. 3110 watts. Shipping wt. 175 lbs. (77.1kg).	100 to 550°F (27.8 to 287°C)	26x20x24" (660x508x610mm) Overall 33x24x33" (838x610x838mm)		H-30160.2F*
10.6cu.ft. Capacity (300L) Large Capacity Bench Ovens Dial-Type and Solid State Digital				
10.6 cu. ft. (300L) capacity. Features calibrated dial-type temp. controller. 115V, 60 Hz. 2110 watts. Shipping wt. 200 lbs. (90.7kg).	437°F (225°C)	25.5x30x24" (648x762x610mm) Overall 33x34x32" (832x864x813mm)		H-30135
Same as above, except 230V, 50/60 Hz.				H-30135.4F
10.6 cu. ft. (300L) capacity. Features solid state digital temperature controller. 115V, 60 Hz. 2110 watts. Shipping wt. 200 lbs. (90.7kg)	437°F (225°C)	25.5x30x24" (648x762x610mm) Overall 33x34x32" (838x864x813mm)		H-30137
Same as above, except 230V, 50/60 Hz.				H-30137.4F
Bench Oven Accessories				
Oven floor stand for use with H-30140 and H-30145. Has one fixed shelf. Shipping wt. 12 lbs. (5.44kg)	—	33" (838mm) work height	H-30150	—
Encloses oven exhaust and allows venting into standard 3" (76mm) stove pipe. For use with H-30135, H-30137, H-30140, H-30145, H-30160 only. Shipping wt. 10 lbs. (4.5kg)	—	23-1/2x4-1/2x4-1/2" (597x114x114mm)	H-30181	

*Cord and plug are not furnished; unit should be connected through conduit system.

Ovens

*Humboldt Testing Equipment
Is Engineered for Precision,
Accuracy, Greater Productivity,
Longer Life & Easier Use.*



Gravity-Convection Ovens

For high productivity efficiently. Despatch LEB gravity-convection ovens are ideal when large capacity and low cost are important. Units feature microprocessor-based digital automatic temperature controller, manual reset high-limit control, welded double-wall construction, Fiberglas insulation, 5-year warranty, baked enamel finish, stainless steel interior, front-mounted controls and on-off indicator light. Heater on the entire chamber base allows heated air to move through the perforated chamber floor. Units reach maximum 204°C (399°F).

H-30300, H-30302, H-30304

Gravity-Convection Ovens

Despatch Model No.	Chamber Size WxDxH in. (cm)	cu. feet (liters)	Capacity Overall Size WxDxH in (cm)	Range w/20°C Ambient	Oper. Electrical, Single Phase	Cord and Plug	No. of Doors	Shpg.Wt. lbs. (kg)	Model
LEB1-21	18x14x14" (46x36x36cm)	2.1 (60)	21x19x24" (53x48x61cm)	50 to 204°C (122 to 399°F)	50/60Hz, 120V, 10 amps, 1.2 KW heater	incl.	1	90 (41)	H-30300
					50/60Hz, 240V, 5 amps, 1.2 KW heater				H-30300.4F*
LEB1-28	24x14x14" (61x36x36cm)	2.8 (79)	27x19x24" (69x48x61cm)		50/60Hz, 120V, 10 amps, 1.2 KW heater	incl.	1	105 (48)	H-30302
					50/60Hz, 240V, 5 amps, 1.2 KW heater				H-30302.4F*
LEB1-47	24x14x24" (61x36x61cm)	4.7 (133)	27x19x29" (69x48x73cm)		50/60Hz, 120V, 13.3 amps, 1.6 KW heater	incl.	1	130 (59)	H-30304
					50/60Hz, 240V, 6.5 amps, 1.6 KW heater				H-30304.4F*
LEB1-76	30x18x24" (76x46x61cm)	7.6 (215)	34x23x36" (86x58x89cm)		50/60Hz, 120V, 20 amps, 2.4 KW heater	none	2	200 (91)	H-30306
					50/60Hz, 240V, 10 amps, 2.4 KW heater				H-30306.4F*
LEB2-20	37x24x37" (94x61x94cm)	20 (566)	40x29x49" (102x74x 122cm)		50/60Hz, 240V, 15 amps, 3.6 KW heater	none	2	350 (159)	H-30308.4F
LEB2-30	37x37x37" (94x94x94cm)	30 (850)	40x42x49" (102x107x 122cm)		50/60Hz, 240V, 20 amps, 4.8 KW heater	none	2	460 (209)	H-30310.4F

* 240 Volt conversion kit supplied, customer installed.

Larger Sizes, Extra Shelves
& Accessories Available.
Call 1-800-544-7220

Ovens



Economical Forced Convection Ovens

Economically processes densely loaded samples where fast processing and versatility are critical. Despatch LDB units are designed to circulate air after heating for more uniform heat distribution. Features microprocessor-based digital controller and manual reset high-limit control, welded double-wall construction, glass fiber insulation, heater warranted for 5 years, baked enamel finish and stainless steel interior.

H-30330, H-30332, H,30334

Forced Convection Ovens									
Despatch Model No.	Chamber Size WxDxH in. (cm)	Capacity cu. feet (liters)	Overall Size WxDxH in (cm)	Range w/20°C Ambient	Oper. Electrical	Cord and Plug	No. of Doors	Shpg. Wt. lbs. (kg)	Model
LDB1-17	18x14x12" (46x36x30cm)	1.75 (49.5)	21x19x24" (53x48x61cm)	50 to 204°C (122 to 399°F)	50/60Hz, 1ph, 120V, 11.6 amps, 1.2 KW heater	incl.	1	100 (45)	H-30330
					50/60Hz, 1ph, 240V, 5.8 amps, 1.2 KW heater				H-30330.4F*
LDB1-24	24x14x12" (61x36x30cm)	2.3 (65)	27x19x24" (69x48x61cm)		50/60Hz, 1ph, 120V, 11.6 amps, 1.2 KW heater	incl.	1	120 (54)	H-30332
					50/60Hz, 1ph, 240V, 5.8 amps, 1.2 KW heater				H-30332.4F*
LDB1-43	24x14x22" (76x46x56cm)	4.3 (122)	27x19x35" (69x48x89cm)		50/60Hz, 1ph, 120V, 15 amps, 1.6 KW heater	incl.	1	145 (66)	H-30334
					50/60Hz, 1ph, 240V, 7.5 amps, 1.6 KW heater				H-30334.4F*
LDB1-69	30x18x22" (76x46x57cm)	6.9 (195)	34x23x36" (86x58x89cm)		50/60Hz, 1ph, 120V, 21.6 amps, 2.4 KW heater	none	2	215 (98)	H-30336
					50/60Hz, 1ph, 240V, 10.8 amps, 2.4 KW heater				H-30336.4F*
LDB2-18	37x24x35" (94x61x89cm)	18 (510)	40x29x49" (102x74x122cm)		50/60Hz, 1ph, 240V, 16.6amps, 3.6 KW heater	none	2	350 (159)	H-30338.4F
LDB2-27	37x37x35" (94x94x89cm)	27.7 (785)	40x42x49" (102x107x 122cm)		50/60Hz, 1ph, 240V, 21.6amps, 4.8 KW heater	none	2	460 (209)	H-30340.4F

* 240 Volt conversion kit supplied, customer installed.

Ovens

Extra Shelves & Accessories
Available. Call 1-800-544-7220



H-30320, H-30322, H-30324, H-30326

H-30328.4F

High-Performance Forced-Air Bench-Top Ovens

For faster processing, testing, preheating, sterilizing, drying, aging, curing and other production applications. Despatch LAC ovens have microprocessor-based control system with single set-point operation, timer function and up to 48 steps of ramp/soak programming as well as manual reset high-limit protection and solid-state relay switching. Horizontal air flow with high fan volume of forced recirculated air through perforated stainless steel walls for uniform heating. Welded double-wall construction, 3" Fiberglass insulation, rapid-response heater with 5-year warranty, baked enamel finish and stainless steel interior.

High Performance Forced-Air Bench-Top Ovens

Despatch Model No.	Chamber Size WxDxH in. (cm)	Capacity cu. feet (liters)	Overall Size WxDxH in (cm)	Oper. Range w/20°C Ambient	Electrical, Single Phase	Exhaust Dia. (on Chamber Back)	Cord and Plug	No. of Doors	Shpg. Wt. lbs. (kg)	Model
LAC1-10	14x12x12" (36x30x30cm)	1.1 (28)	23x21x30" (58x53x76cm)	35-260°C (95-500°F)	50/60Hz, 120V, 10 amps, 1 KW heater	1"	incl.	1	95 (43)	H-30320
LAC1-38A	19x18x19" (48x46x48cm)	3.8 (108)	28x28x37" (36x30x42cm)		50/60Hz, 120V, 16 amps, 1.6 KW heater	2"	incl.	1	165 (75)	H-30322
LAC1-38B	19x18x19" (48x46x48cm)	3.8 (108)	28x28x37" (36x30x42cm)		50/60Hz, 240V, 9.2 amps, 1.8 KW heater	2"	incl.	1	165 (75)	H-30322.4F*
LAC1-67	24x20x24" (61x51x61cm)	6.7 (190)	36x30x42" (91x76x107cm)		50/60Hz, 240V, 11.7 amps, 2.4 KW heater	2"	incl.	1	203 (92)	H-30324.4F
LAC2-12	24x24x36" (61x61x90cm)	12 (340)	36x33x54" (91x84x137cm)	50-260°C (122-500°F)	50/60Hz, 240V, 18.4 amps, 3.6 KW heater	2-2-1/2"	none	1	535 (243)	H-30326.4F
LAC2-18	36x24x36" (90x61x90cm)	18 (510)	48x31x54" (122x79x 137cm)		50/60Hz, 240V, 23.4 amps, 4.8 KW heater	2-2-1/2"	none	2	720 (284)	H-30328.4F

* 240 Volt conversion kit supplied, customer installed.

For Technical Assistance
or Professional Sales Service,
Call Humboldt:
1-800-544-7220

Desiccator, Field Stove



H-4962



H-4960



H-4164



H-4947

Desiccab Desiccator

Stainless steel cabinet with Clear-View door eliminates danger of glass breakage. Interior has chemical-resistant finish; door is sealed with two firm-grip latches and molded rubber gasket. Includes glass desiccator tray and two heavy-gauge ceramic shelves that are fully adjustable with 1/2" (13mm) centers. Two petcocks enable unit to be flushed with gases or to relieve any vacuum. Inside dimensions: 13x13x13-1/4" (330x330x336mm).

Description	Model
Desiccab desiccator.	H-4962

Shipping wt. 25 lbs. (11.3kg)

Desiccator Jars

Heavy walled annealed jar has finely ground flanges and cover knob. Includes plate.

Description	Model
Desiccator jar. Inside diameter 5" (128mm), inside height 5-1/4" (134mm). Shipping wt. 8 lbs (3.6kg)	H-4960
Desiccator jar. Inside diameter 8" (203mm), inside height 8 (203mm)". Shipping wt. 13 lbs (5.9kg)	H-4961

Description, Accessories	Model
Desiccator plate for use with H-4960 desiccator.	H-4960P
Desiccator plate for use with H-4961 desiccator.	H-4961P

Field Stove

Features two fully adjustable wafer-type self-cleaning stainless steel burners that distribute heat evenly and will not rust or burn out. Includes nickel-chrome grate, built-in pump and wind shields in collapsible case for easy transport. Uses lead-free gasoline. Fuel tank capacity: 3-1/2 pints (1.7L). Closed dimensions: 22x13-3/4x6-1/4" (559x349x159mm).

Description	Model
Field stove.	H-4164

Shipping wt. 15 lbs. (6.8kg)

Gas Hot Plates

Light, portable, economical. Universal gas valves, adjustable for propane or natural gas. General use, adjustable burners.

Description	Model
Gas hot plate, 2-burner. 19-1/2x11x6-1/4" (495x279x159mm)	H-4947

Shipping wt. 10 lbs. (4.5kg)

Description	Model
Gas hot plate, 3-burner. 27-1/2x11x6-1/4" (699x279x159mm)	H-4948

Shipping wt. 14 lbs. (6.4kg)



Hot Plates

*Humboldt Testing Equipment
Is Engineered for Precision,
Accuracy, Greater Productivity,
Longer Life & Easier Use.*



H-4949



H-4950, H-4951



H-4952, H-4953



H-4959

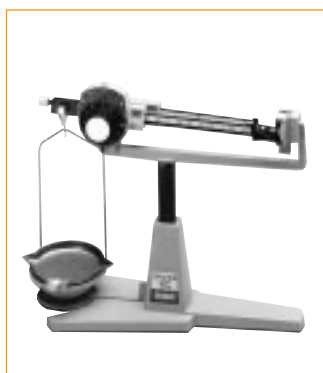
Hot Plates

Description	Applications	Size	Temperature Range	Shpg. Wt.	Model
Gas hot plates. Light, portable, economical. Universal gas valves, adjustable for propane or natural gas. See photos on page 183.	General use	19-1/2x11x6-1/4" (495x279x159mm)	Adjustable burner	10lbs. (4.5kg)	H-4947
		27-1/2x11x6-1/4" (699x279x159mm)		14lbs. (6.4kg)	H-4948
Dual-burner electric hot plate. Two 825-watt rapid heating burners. Infinite heat controls, heavy-gauge steel construction; chrome finish; phenolic feet. Includes 3-wire cord and plug, 2 red signal lights. UL approved. 120V. 1,650W, 60/60Hz. AC only.	General use with tubular elements.	Both heating elements: 6-1/2" (16.5cm) dia. Overall: 20-1/2x8-3/4x4" (52x22x10cm)	Warm-simmer-rolling boil with adjustable controls.	9lbs. (4.1kg)	H-4949
Electric hot plate. Extra-sensitive thermostat power unit input automatically adjusts to size and temperature of load placed on top. Cast aluminum top plate with integral ribs will not warp or buckle. Stainless steel case; phenolic feet. Includes dovetail socket, pilot light, 3-wire cord and plug. 120V. 50/60Hz. 6.3 amps. 750W. AC.	General laboratory, soil analysis, shop, etc.	Top plate: 6-1/4x6-1/4" (15.9x15.9cm) Overall: 6-5/8x4-3/8x7-5/8" (16.8x11.1x29.4cm)	Automatic stepless control holds within 5°F (3°C) to 200°F (93°C); within 2°F (1.1°C) from 200 to 700°F (93 to 371°C).	6lbs. (2.7kg)	H-4950
Same as H-4950 except 240V. 50/60Hz. 3.15 amps. 750W. AC.					H-4950.4F
Electric hot plate. Heats slow or fast, as needed. Machined cast-iron top plate provides best heat transfer. Stainless steel 2-section case is separated by insulation. Includes 3-wire cord and plug. 120V. 50/60Hz. AC. 8.32 amps. 200 to 1080W. AC.	Heating asphaltic products, limestone analysis, heavy-duty industrial jobs, production line use. Supports heavy loads.	Top plate: 9x9" (23x23cm) Overall: 9"x6-1/4x10" (23x16x25cm)	4-position switch selects input and temperature range: 425°F (224°C) 600°F (316°C) 675°F (357°C) 900°F (482°C)	21lbs. (9.5kg)	H-4951
Same as H-4951 except 240V. 50/60Hz. 4.16 amps. 1000W. AC.					H-4951.4F
Electric hot plate. Cast aluminum top plate with integral ribs will not warp or buckle. Perforated stainless steel case supports heavy loads. Includes 3-wire cord and plug. 120V. 50/60Hz. 13.3 amps. 1600W. AC.	Distillation of liquids, drying aggregates, bituminous paving samples, soil analysis, etc.	Top plate: 12x12" (30x30cm) Overall: 12x6-1/8x13" (30x13x33cm)	Variable temperature control from ambient to 700°F (371°C).	26lbs. (11.8kg)	H-4952
Same as H-4952 except 240V. 50/60Hz. 6.7 amps. 1600W. AC.					H-4952.4F
Similar to H-4952; Not supplied with cord and plug due to high-wattage consumption requirements—must be connected through electrical conduit fittings. 120V. 50/60Hz. 26.6 amps. 3200W. AC.		Top plate: 12x24" (30x61cm) Overall: 24x6-1/8x13" (61x13x33cm)	Variable temperature control from ambient to 700°F (371°C).	50lbs. (22.7kg)	H-4953
Same as H-4953 except 240V. 50/60Hz. 13.3 amps. 3200W. AC.					H-4953.4F
Electric hot plate. Solid-state controls; porcelain coated stainless steel top plates. Low-profile design. Includes 3-wire cord and plug. 120V. 50/60Hz. 7.0 amps. 840W. AC.	Laboratory, shop, office, etc.	Top plate: 7x7" (18x18cm) Overall: (28x9x18cm) 11x3-1/2x7-1/4"	Demand-type thermostatic control from ambient to 700°F (371°C)	8lbs. (3.6kg)	H-4959
Same as H4959 except 240V, 50/60Hz. 3.5 amps. 840W. AC.					H-4959.4F

Ohaus Mechanical Balances



H-4825



H-4830



H-4603, H-4604



H-4605



H-4835



H-4837



H-4660, H-4665



H-4785

Ohaus Mechanical Balances

High precision, high value, easy-to-use instruments for laboratory bench and/or field applications. Choose from our wide range of features and accessories to meet your most demanding need.

Ohaus Mechanical Balances

Description	Ohaus Model	Capacity	Readability	Tare	Platform Type/Size	Shpg. Wt.	Model
Cent-O-Gram®	311-00	311g	0.01g	—	Stainless steel pan. 3.5 diam. x 0.5" deep	5.5lbs (2.49kg)	H-4825
Dial-O-Gram®	310-00	310g	0.01g	—	Stainless steel pan. 3.5 diam. x 0.5" deep	5.5lbs (2.49kg)	H-4830
Triple Beam Series 700 (includes attachment weight set H-4609)	750-SW (707)	2610g	0.1g	—	Stainless steel plate. 6" diam.	8.8lbs (3.99kg)	H-4603
Triple Beam Series 700 (includes attachment weight set H-4609)	760-OO (707)	2610g	0.1g	225g	Stainless steel plate. 6" diam.	8.3lbs (3.76kg)	H-4604
Triple Beam Series 700 (includes attachment weight set H-4609)	720-SO (707)	2610g	0.1g	—	Stainless steel scoop. 12x6x3"	8.3lbs (3.76kg)	H-4605
Dial-O-Gram®	1650-WO (707)	2610g	0.1g	225g	Stainless steel plate. 6" diam.	9.9lbs (4.49kg)	H-4835
Dial-O-Gram® (includes stainless steel scoop and counterweight)	1650-WO (703-SO)	610g	0.1g	225g	Stainless steel plate. 6" diam.	10lbs (4.5kg)	H-4837
Heavy Duty Field scales, metric	2400-11	16kg	5.0g	—	Epoxy-coated steel. 10" diam.	23lbs (10.45kg)	H-4665
Heavy Duty Field scales, English	2400-12	36lbs	0.01lbs	—	Epoxy-coated steel. 10" diam.	23lbs (10.45kg)	H-4660
Heavy Duty Solution Balance	1119-DO	20kg	1.0g	2270g	Stainless steel. 11" diam.	44lbs (19.96kg)	H-4785

Balance/Scale Accessories



H-4603CC



H-4615S



H-4876



H-4886

Accessories for Ohaus Mechanical Balances

Description	Ohaus Model	For Use With Model:		Model	Description	Includes	Model
		Ohaus	Humboldt				
Vinyl Dust Cover.	706-OO	750-SW 760-OO 720-SO 1650-WO 1610-DD	H-4603 H-4604 H-4605 H-4835 H-4837	H-4603C	Metric brass weight set, 1 to 1,000g. In box without lid.	1; $\frac{2}{2}$; 3; 5; $\frac{10}{10}$; 30; 50; $\frac{100}{100}$; 200; 500g	H-4876
Attachment weight set. Extends weighing range to 2610g. * Included with balance.	707			H-4609	Metric brass weight set, 1 to 1,000g. In box with lid.	1; $\frac{2}{2}$; 3; 5; $\frac{10}{10}$; 30; 50; $\frac{100}{100}$; 200; 500g	H-4886
Rod & clamp assembly for under-balance weighing.	—	750SW 760-OO 720-SO	H-4603* H-4604* H-4605*	H-21170	Metric brass weight set, 1 to 2,000g. In box without lid.	1; $\frac{2}{2}$; 3; 5; $\frac{10}{10}$; 30; 50; $\frac{100}{100}$; 200; 500; 1,000g	H-4877
Polypropylene scoop & counterweight.	703			H-4615P	Metric brass weight set, 1 to 2,000g. In box with lid.	1; $\frac{2}{2}$; 3; 5; $\frac{10}{10}$; 30; 50; $\frac{100}{100}$; 200; 500; 1,000g	H-4887
Stainless steel scoop & counterweight. * Included with balance	703-SO	1650-WO	H-4837*	H-4615S	Metric brass weight set, 100 to 1,000g.	100; 200; 500; 1,000g	H-4878
Aluminum scoop & counterweight. 22x11-1/2x6"	126-OO	119-DO	H-4785	H-4616	Calibration weight set, 100g x 2kg	100; $\frac{200}{200}$; 500g; 1kg; 2kg	H-4882
Steel carrying case.	—	750-SW 760-OO 720-SO 1650-WO 1610-DD	H-4603 H-4604 H-4605 H-4835 H-4837	H-4603CC	Field scale replacement weights	Avoirdupois for H-4600 1 lb (1 required) 2 lb (2 required) 5 lb (2 required) 10 lb (2 required)	H-4660.1 H-4660.2 H-4660.5 H-4660.10
Attachment weight set for triple beam balances, 500g.	—	750-SW 760-OO 720-SO	H-4603 H-4604 H-4605	H-4601	Field scale replacement weights	Metric for H-4665 500g (1 required) 1kg (1 required) 2kg (2 required) 5kg (2 required)	H-4665.1 H-4665.2 H-4665.3 H-4665.4
Attachment weight set for triple beam balances, 1,000g	—	1650-WO 1610-DD	H-4835 H-4837	H-4602			

NOTE: If no shipping weight is listed, item weighs 5 lbs. or less.



All New Model Lineup from Ohaus,
the Unsurpassed Leader in Quality
Scales & Balances.

Ohaus Electronic Balances



H-4720, H-4724, H-4726

Ohaus Scout Series

New, easy-to-use, easy-to-calibrate, easy-to-clean, easy-to-carry portable units offer many features at very competitive prices:

- Large, easy-to-read display
- Quick calibration, mass included.
- Full-capacity tare
- Auto shut-off
- Large stainless steel platform
- Four weighing units
- Sealed front panel, plus spill ring
- Weigh-below for specific gravity density
- Selected weighing units.



H-4860, H-4862

Ohaus Portable Advanced Series

More sophisticated portable units have higher capacity, plus adjustable stability and averaging levels to maintain precision in unpredictable environments.

- Simple two-button operation
- AC or battery for up to 50 hours of field weighing.
- Quick calibration, mass included.
- Full-capacity tare
- Auto shut-off
- Large stainless steel platform
- Four weighing units
- Sealed front panel, plus spill ring
- Weigh-below for specific gravity/density (N/A for H-4862)
- Selected weighing units.

Ohaus Scout/Portable Advanced Electronic Balances

Description/Capacity	Ohaus Model	Read-ability	Weighing Modes	Repeatability (Std. Dev.)	Linearity	Power	Masses Needed for Calibration		Platform Size	Shipping Wt.	Model
							Span	Linearity			
Scout 200g	SC2020	0.01g	g, oz, ozt, dwt,	0.01g	± 0.01g	9V battery; 120, 220V AC; 50/60Hz	200g*	100/200g	4" diam. (10.2cm)	7 lbs (3.2kg)	H-4720
Scout 400g	SC4010	0.1g		200g*	200/400g		5x5.75" (12.7x14.6cm)	7 lbs (3.2kg)	H-4724		
Scout 600g	SC6010			300g*	300/600g			7 lbs (3.2kg)	H-4726		
Portable Advanced 1,210g	CT1200	0.5g	g, oz, ozt, dwt, lb, taels, custom unit	0.5g	± 0.1g	8-AA batteries; 120, 220V AC; 50/60Hz	—	4.75x6.5" (12.1x16.5cm)	8 lbs (3.6kg)	H-4860	
Portable Advanced 6,010g Weigh-below not available on this model.	CT6000								13 lbs (5.9kg)	H-4862	

* Span masses included with balance

For your added convenience, Humboldt accepts
American Express, MasterCard and Visa



Ohaus Electronic Balances



H-4500V



H-4502V, H-4504V



H-4506V, H-4508V, H-4510V

Ohaus Voyager Series

Full-featured unit for advanced applications, combines high precision with simple operation.

- General weighing
- Differential weighing
- Density determination
- Quick check
- Statistics
- Formulation

- Large, high-resolution backlit display with brightness & contrast control
- Custom menus with help text
- Pop-up windows for easy menu operation
- Ergonomically engineered leveling system
- Includes RS232 bi-directional computer interface
- Application library
- Contoured for easy cleaning
- All models equipped with built-in weigh-below hook
- UL and CSA certified
- 5-year manufacturer's warranty on both parts & labor.

Ohaus Voyager Electronic Balances

Description/Capacity	Ohaus Model	Read-ability	Weighing Modes	Repeatability (Std. Dev.)	Linearity	Power	Masses Needed for Calibration		Platform Size	Shipping Weight	Model
							Span	Linearity			
Voyager 410g	VO4130	0.001g	g, mg, kg, lbs, oz, ozt, ct, dwt, tases (3), mommes, gn, ti, N, custom unit	0.0005g	± 0.002g	115V, 60Hz	400g	200/400g	4.75" diam. (120mm)	23 lbs (10.5kg)	H-4500V
Voyager 4,100g with windshield	VOD120	0.01g		0.005g	± 0.02g		4,000g	2,000/4,000g	6.875x6.875" (172x172mm)	18 lbs (8.2kg)	H-4502V
Voyager 8,100g	VOH110	0.1g		0.05g	± 0.1g		8,000g	4,000/8,000g	8x8" (203x203mm)		H-4504V
Voyager 12,000g	VOK210		g, kg, lbs, oz, ozt, ct, dwt, tases (3), mommes, gn, ti, N, custom unit	0.1g	± 0.4g		10kg	5/10kg	11x14" (280x356mm)	31 bs 14.1kg	H-4506V
Voyager 22,000g	VOL210						20kg	10/20kg			H-4508V
Voyager 32,000g	VOM210						30kg	15/30kg			H-4510V

Description, Accessories

Model

Foreign voltage power pack and cord set, 220V, 50/60Hz.
For use with all Voyager models.

H-4520PK



NOTE: If no shipping weight is listed, item weighs 5 lbs. or less.

All New Model Lineup from Ohaus,
the Unsurpassed Leader in Quality
Scales & Balances.

Ohaus Electronic Balances



H-4500E



H-4502E, H-4504E



H-4506E, H-4508E, H-4510E

Ohaus Explorer Series

Ideal easy-to-use workhorse unit for most general weighing applications. All models in Explorer series feature:

- Custom LCD display with seven alphanumeric characters

- Ergonomically engineered leveling system
- Contoured for easy cleaning
- All models equipped with built-in weigh-below hook
- Includes RS232 bi-directional computer interface
- UL and CSA certified
- 5-year manufacturer's warranty on both parts & labor.

Ohaus Explorer Electronic Balances

Description/Capacity	Ohaus Model	Readability	Weighing Modes	Repeatability (Std. Dev.)	Linearity	Power	Masses Needed for Calibration		Platform Size	Shipping Weight	Model
							Span	Linearity			
Explorer 410g	EO4130	0.001g	g, mg, kg, lbs, oz, ozt, ct, dwt, tases (3), mommes, gn, ti, N, custom unit	0.0005g	± 0.002g	115V, 60Hz	400g	200/400g	4.75" diam. (120mm)	23 lbs (10.5kg)	H-4500E
Explorer 4,100g with windshield	EOD120	0.01g		0.005g	± 0.02g		4,000g	2,000/4,000g	6.875x6.875" (172x172mm)	18 lbs (8.2kg)	H-4502E
Explorer 8,100g	EOH110	0.1g		0.05g	± 0.1g		8,000g	4,000/8,000g	8x8" (203x203mm)		H-4504E
Explorer 12,000g	EOK210		g, kg, lbs, oz, ozt, ct, dwt, tases (3), mommes, gn, ti, N, custom unit	0.1g	± 0.4g		10kg	5/10kg	11x14" (280x356mm)	H-4506E	
Explorer 22,000g	EOL210						20kg	10/20kg		H-4508E	
Explorer 32,000g	EOM210						30kg	15/30kg		H-4510E	

Description, Accessories	Model
Foreign voltage power pack and cord set, 220V, 50/60Hz. For use with all Explorer models.	H-4520PK

For your added convenience, Humboldt accepts
American Express, MasterCard and Visa



Ohaus Electronic Balances



H-4816, H-4818



H-4765

Ohaus Precision Standard Top Loading Series

High precision, yet economical. Features:

- Adjustable averaging and stability levels
- Factory calibration
- Stability Indicator
- Auto calibration
- Calibration lock-out switch

Ohaus Moisture Determination Balance

Automatically determines moisture content or dry weight of samples up to 200g and displays results in percentage. Three different temperatures can be programmed for time periods of 180 minutes each during a single cycle.

Features:

- Includes RS232 bi-directional computer interface
- Auto-dry mode
- Audible signal at test completion.

Ohaus Precision Standard Electronic Balances

Description/Capacity	Ohaus Model	Read-ability	Weighing Modes	Repeatability (Std. Dev.)	Linearity	Power	Masses Needed for Calibration		Platform Size	Shipping Weight	Model
							Span	Linearity			
Precision Standard 4,000g	TS4K	0.1g	lbs, g, oz, dwt, mommes	0.07g	± 0.1g	120V, 50/60Hz	4kg	2/4kg	6x6.5" (152x165mm)	14lbs (6.3kg)	H-4816
Precision Standard 800/4,000g	TS4KD	0.01/0.1g		0.01/0.07g	±0.021/0.1g		4kg	500g/4kg			H-4818

Description, Accessories

Model

Foreign voltage power pack and cord set, 220V, 50/60Hz. For use with all Precision Standard models.

H-4520PK

Ohaus Moisture Determination Electronic Balances

Description/Capacity	Ohaus Model	Read-ability	Weighing Modes	Repeatability (Std. Dev.)	Linearity	Power	Masses Needed for Calibration		Platform Size	Shipping Wt.	Model
							Span	Linearity			
Moisture Determination 200g	MB200	0.01g	Grams, Percentage of moisture	0.007g	± 0.01g	115V 50/60Hz	200g	100/200g	5" diam. (12.7mm)	19 lbs (8.6kg)	H-4765
Moisture Determination 200g	MB200					230V 50/60Hz			6x6.5" cover (15.2x15.5mm)		H-4765.4F



NOTE: If no shipping weight is listed, item weighs 5 lbs. or less.

For Technical Assistance
or Professional Sales Service,
Call Humboldt:
1-800-544-7220

Ohaus Bench Scales



H-4760, H-4762, H-4764, H-4767

Ohaus General Purpose Electronic Bench Scales

For weighing applications up to 200 lbs., durable stainless steel platform scale weighs in user-selectable lb., kg, oz or g units. Features auto-calibration, auto-zero tracking, adjustable averaging and stability levels, auto-off timer, programmable menu lockout, factory reset, sealed front panel, battery or adapter operation and five-year warranty. Indicator has anodized aluminum housing.

Ohaus General Purpose Bench Scales

Description/Capacity	Ohaus Model	Readability Non type approved	Weighing Modes	Repeatability (Std. Dev.)*	Power AC (Adapter)	Power (Battery)	Platform Size	Shipping Weight	Model
Stainless Steel Platform 50 lb (25 kg)	B25S05	0.005 lb (0.002 kg)	oz, lb, g, kg	± 0.01%	120, 220V 50/60Hz	6 Alkaline "C" cells	12x12x3.3" (300x300x86mm)	18 lbs (18.2kg)	H-4760
Stainless Steel Platform 100 lb (50 kg)	B50S05	0.01 lb (0.005 kg)					18x18x3.6" (450x450x91mm)		H-4762
Stainless Steel Platform 200 lb (100 kg)	B100S05	0.02 lb (0.01 kg)					36 lbs (16.3kg)	H-4764	
Stainless Steel Platform 300 lb (150 kg)	B150S05						24x24x4.75" (610x610x121mm)	H-4767	

* Specifications are given as a percentage of the rated load.



Platform Scales

*Humboldt Testing Equipment
Is Engineered for Precision,
Accuracy, Greater Productivity,
Longer Life & Easier Use.*



H-4732

Full-Capacity Double-Beam Platform Scale (with Carrying Handle)

Full-capacity counter beam scales are portable. Positive platform and beam locks secure the lever system, maintaining the scale in balance between moves between weighing locations. Locking devices also eliminate annoying rattles and vibration wear during transport. Carrying handle doubles as a beam guard and allows convenient hanging from wall brackets, freeing bench and counter space.

Featuring a stainless steel poise rail, the beams are mounted below the platform, allowing unrestricted visibility when weighing. Beam balance indicator ensures correct reading. Main frame has rubber cushion mounting for protection.

Platform: 12x16" (305x406mm).

Description	Model
Double-beam platform scale, lbs. only, 131 lbs. Mainbeam, 125 lbs. by 5 lb. subgraduations; second beam, 5 lbs x 0.1 lb.; tare blank, 0.01-1 lb.	H-4732
Double-beam platform scale, metric, 52kg. Mainbeam, 50kg. by 2kg. subgraduations; second beam, 2kg x 0.02kg.; tare blank, 0-2kg.	H-4732M

Shipping wt. 26 lbs. (12.3kg)

Description, Accessories	Model
Stainless steel cover for H-4732, H-4732M.	H-4732SC



H-4748



H-4484

Heavy-Duty Portable Platform Scale

Designed for accuracy, durability and precision in the field or lab, portable scale provides greater linear accuracy. Features permanently attached sliding weights, hardened tool steel pivots and bearings. Angled mirror device behind indicators makes obtaining precise readings more convenient. Includes locking device and carrying handle, which protects the beam assembly during use and transport. Platform: 16-1/4x21-3/4" (41.3x55.3cm). Choice of lbs. or kg.

Description	Model
Heavy-duty portable platform scale, lbs. only, 301 lb. Main beam, 295 lbs by 5 lb subgraduations; second beam, 1 lb by 0.01 lb.; tare blank, 34 lbs.	H-4748
Heavy-duty portable platform scale, metric, 150kg. Main beam, 140kg by 10kg subgraduations; second beam, 10kg by 100gm; tare blank, 15.5kg.	H-4748M

Shipping wt. 45 lbs. (20kg)

Heavy-Duty Universal Dial Scales

Dial scale has 70 lbs. by .2 lb (30kg by 100g) capacity and features slanted dial with lb. and kg graduations, Plexiglas dial chart cover protected by metal scroll and mild steel painted base.

Description	Model
Heavy-duty universal dial scales.	H-4484

Shipping wt. 12 lbs. (6kg)



NOTE: If no shipping weight is listed, item weighs 5 lbs. or less.

For Technical Assistance
or Professional Sales Service,
Call Humboldt:
1-800-544-7220



H-4620, H-4625

U.S. and Metric Suspension Scales

Humboldt suspension scales are designed for precision unit weight and specific gravity determinations. Large, easy-to-read digital display makes weighing fast and accurate. Features switch to lock in weight reading and prevent fluctuation; large hook to accommodate any Humboldt yield bucket and double-loop cable for use with aluminum buckets. Upper hook is removable, allowing unit to be lifted by hand with built-in crossbar. Powered by 9V batteries with low-battery signal. Zero and tare adjustments are easy by turning rotating knob on side. Includes carrying case.

Specifications	H-4620	Metric H-4625
Weighing Range	0-200 lbs.	0-100kg
Maximum Tare	50 lbs.	25kg
Resolution	±.01 lbs.	±.01kg
Accuracy	±.05%	±.05%

Description	Model
Suspension scale, English.	H-4620
Suspension scale, metric.	H-4625

Shipping wt. 8 lbs. (3.6kg)

Suspension & Spring Scales



H-4480



H-4490

Spring Scale

For field soil tests in mechanical analysis of aggregates, scale has 60 lb. capacity. Dial is 30 lbs. by 0.1 lb. For direct reading, loose pointer is set at any position on the 8" (203mm) dia. dial with thumbscrew. Overall dimensions: 8x1-5/8x16" (203x41x406mm).

Description	Model
Spring scale.	H-4480

Shipping wt. 8 lbs. (3.6kg)

Straight Spring Balance

Heavy-duty spring balance for batch weighings with reliable accuracy and 100 lb. capacity. Gauge 100 lbs. by 1 lb. Easy-to-read recessed gauge has deep-etched graduations. Adjustable indicator is set to zero for taring. Overall dimensions: 2x1-3/4x11" (51x45x279mm).

Description	Model
Straight spring balance.	H-4490

Shipping wt. 8 lbs. (3.6kg)



Mixers

Larger Capacity Mixers, plus Other Models with Special Features Available. Call 1-800-544-7220



H-3841

5-Qt. Mixer

For mixing hydraulic cement pastes and mortars of plastic consistency. Hobart Model No. N-50 operates on principle of planetary action—beater or whip reaches every part of the batch, rotating on its axis in opposite direction as it moves around the bowl. Thoroughly blends, mixes and aerates all ingredients for consistent predictable finished batches.

Selective agitator transmission has 3 speed settings: 139, 285 and 591 RPM. Includes 5-qt. (4.73L) stainless steel bowl and 1 flat stainless steel beater for mixing heavy materials. Base dimensions: 10-3/8x15" (264x381mm). Height: 17" (432mm). Features U/L listed cord and plug. Meets ASTM C227, C305; AASHTO T162.

Description	Model
5-Qt. mixer. 115V. 60Hz. 1ph. AC. 1/6HP. 124W.	H-3841
5-Qt. mixer. 230V. 50/60Hz. 1ph. AC. 1/6HP. 124W.	H-3841.4F

Shipping wt. 55 lbs. (25kg)

Description, Accessories	Model
Bowl positioning adapter bracket for H-3841; provides proper clearance between bottom of mixing bowl and paddles. Meets ASTM C305; AASHTO T162.	H-3844
Plexiglass bowl lid fits over top of bowl with covered opening for planetary action.	H-3846L
Flat-type stainless steel beater.	H-3841.1
Stainless steel bowl, 5 qt.	H-3841.2
Stainless steel wire loop whip for H-3841.	H-3841WWW
*Custom heavy-duty 1/4" diam wire stainless steel whip.	H-3841HW

*Custom Heavy-Duty 1/4" Wire Stainless Steel Whips

Made to order to fit your existing whip hub.
For information/price quotation,
call 1-800-544-7220.



H-3842



H-3843



H-3842HW

H-3841HW

12-Qt. Laboratory Bench Mixer

Hobart Model A-120's bowl has 12-qt. (0.401 cu. ft.) mixing capacity and 15-minute motor-driven timer. Planetary action of beater assures thorough blending and mixing. Selective agitator transmission has 3 speed settings: 106, 196 and 358 RPM. Includes stainless-steel bowl, flat-type aluminum grid beater and aluminum dough hook. Base dimension: 14-3/4x20x29-9/16" (375x508x750cm).

Description	Model
12-Qt. Laboratory bench mixer. 115V. 60Hz. 1ph. AC. 1/3HP. 373 W.	H-3842
12-Qt. Laboratory bench mixer. 230V. 50Hz. 1ph. AC. 1/3HP. 373 W.	H-3842.5F

Shipping wt. 185 lbs. (83.9 kg)

Description, Accessories	Model
Aluminum beater.	H-3842.1
12-Qt. Stainless-steel bowl.	H-3842.2
Aluminum dough hook.	H-3842DH
Stainless-steel wire loop whip.	H-3842WWW
*Custom heavy-duty 1/4" diam wire stainless steel whip.	H-3842HW

20-Qt. Laboratory Bench Mixer

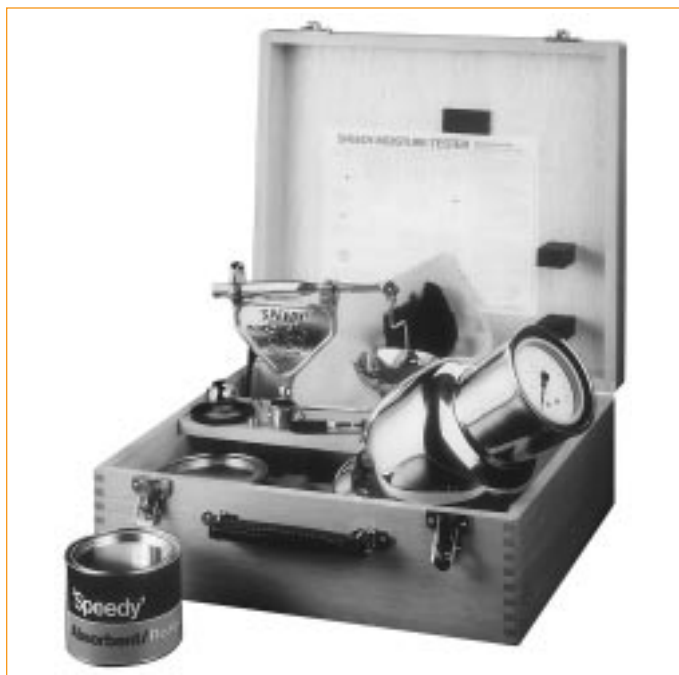
With 20-qt.-capacity (0.6684 cu. ft.) bowl, Hobart A-200 mixer has positive gear drive and planetary mixing action to deliver positive results. Selective agitator transmission has 3 speed settings: 107, 198 and 361 RPM. Exclusive stirring switch provides low (53RPM) speed to facilitate adding liquids to semi-solids. Includes stainless-steel bowl and flat-type aluminum grid beater. Base dimension: 21x21-1/2x41-1/4" (533x546x1048cm).

Description	Model
20-Qt. Laboratory bench mixer. 115V. 60Hz. 1ph. AC. 1/2HP. 373 W.	H-3843
20-Qt. Laboratory bench mixer. 230V. 50Hz. 1ph. AC. 1/2HP. 373 W.	H-3843.5F

Shipping wt. 226 lbs. (102kg)

Description, Accessories	Model
Aluminum flat-type grid beater.	H-3843.1
Stainless-steel bowl, 20-qt.	H-3843.2
Aluminum dough hook.	H-3843DH
Stainless-steel wire loop whip.	H-3843WWW
*Custom heavy-duty 1/4" diam wire stainless steel whip.	H-3843HW

Speedy® Moisture, L.A. Abrasion



H-4963, H-4966

Speedy® Moisture Tester

Gives fast, accurate measurements of moisture content in powders, mixes, pastes—of soil, sand, clay or any granular material. Portable for field use. Pressure gauge is calibrated for direct reading of percentage of moisture in specimen. Includes pressure gauge, tared balance, measuring scoop, cleaning cloth, brushes and oak carrying case. Meets ASTM **D4944**; AASHTO T217. Separate calibration kit assures continued accuracy every time.

Speedy® Moisture Testure

Capacity	% Range	Shipping Weight	Model
6g	0-20	14 lbs (6.4 kg)	H-4964
20g	0-20	18 lb (7.3 kg)	H-4963

Calibration Kit

Includes calibration unit, instructions, wooden carrying case.

Description	Model
Calibration kit.	H-4965

Moisture Tester Reagent

Calcium carbide reagent for Speedy® Moisture Testers. Carton of 24-1 lb. (0.5kg) cans. Shipped via motor freight only.

Description	Model
Moisture tester reagent.	H-4966

Shipping wt. 26 lbs. (11.7kg)

HAZARDOUS WARNING:

Danger of explosion/fire may result if allowed to contact with moisture. Calcium carbide forms flammable acetylene gas when wet so must be kept sealed and dry. Provide adequate ventilation and use away from sparks and flame. U.S. shipping regulations require shipment by approved carriers. Contact Humboldt for international shipping regulations.



H-3860

Los Angeles Abrasion Machine

Tests for resistance to abrasion in crushed rock, slag, crushed and uncrushed gravel, using Los Angeles testing method. Features welded structural steel frame, fabricated 1/2"-thick (913mm) abrasion-resistant steel drum, removable shelf bolted to drum and balanced drum assembly for easy rotation by hand.

Enclosed chain drive rotates drum without conventional slip clutch. Positive drive delivers greater accuracy. Self-contained worm-drive motorized speed reducer has anti-friction bearings and sealed lubrication. Motor is 1HP (746W), equipped with magnetic push-button control and automatic overload cutout. Includes revolution counter, material catch pan, set of 12 standard abrasion charges. Dimensions: 39x29x37" (991x737x940mm). Meets ASTM C131, C535; AASHTO T96.

Description	Model
Los Angeles abrasion machine. 115V. 60Hz. 1 ph. AC.	H-3860
Los Angeles abrasion machine. 230V. 50Hz. 1 ph. AC.	H-3860.5F

Shipping wt. 1060 lbs. (485kg)

Abrasion Charges

Same as furnished with H-3860, set of 12 abrasion charges. Size and weight meet specifications.

Description	Model
Abrasive charges.	H-3865

Shipping wt. 20 lbs. (9kg)

For your added convenience, Humboldt accepts American Express, MasterCard and Visa



Core Drilling



HR-2500

Portable Diamond Core Drilling Machines

Compact core drilling machines for obtaining cores from concrete, paving, foundations, runways and similar hard materials. Lightweight, reliable, powerful, easily operated unit on base wheels can be moved anywhere. Leveling screws, located in corners of base, allow machines to be set into position quickly by one person. High-quality cores can be obtained with diamond core barrel bits at a fast penetration rate.

Electric Core Drill

Drills holes up to 10" (254mm) dia.; standard 14" long bit provides 12" long core sample. Vacuum pad base grips surfaces solidly. Motor carriage slips off the top of the column to expose the hole for ease in snapping cores, adding extension rods, etc., without disturbing location of the drill. Quickly set up for wall drilling, vacuum holds base and column to the wall. Carriage and motor assembly slip on the column. Swivel model column rotates 180° radial arc so drilling can be done at end, corners or sides of the vacuum base. When working in a limited area, drilling is possible with 10" base removed.

Features two-speed 350/900 rpm, AC/DC heavy-duty motor, waterproof switch box, built-in water swivel, bubble level, ceiling jack and dual-sway brace. Includes continuous-duty oilless vacuum pump, filter, hose and quick connections. Requires water supply; if none is available, order HR-2516 portable water pressure tank separately. Order diamond bits and expanding adapters separately.

Description	Model
Electric core drill, 18 amps, 115V, 60Hz..	HR-2500
Electric core drill, 9 amps, 230V, 50Hz..	HR-2500.5F

Shipping wt. 130 lbs. (59kg).



HR-2503

Gasoline-Powered Core Drill

For vertical drilling only, unit can be carried in pickup truck or van as needed. Effortless ball-screw feed operates at convenient height. Designed for easy use by one operator. Requires water supply; if none is available, order HR-2516 portable water pressure tank separately. Drill with 8HP, 4 cycle, gasoline engine. Order diamond bits and expanding adapters separately.

Description	Model
Gasoline-powered core drill.	HR-2503

Shipping wt. 275 lbs. (125kg)

Description, Accessories	Model
Extension rod, 9" (229mm), for drilling holes deeper than 12" (305mm).	HR-2510.
Water trapping assembly confines wastewater on the surface, and electric pump moves water into container.	HR-2511
Diamond bit edge dresser.	HR-2512
Replacement wheel for HR-2512.	HR-2513
Strap wrench, 18" (457mm), allows bit removal from drill spindle without damage to bit barrel.	HR-2514
Angle drilling attachment for HR-2500. Tilts column to allow drilling from 90° to 45° angle from the surface.	HR-2515
Portable water pressure tank. Hand-operated, 4 gal. (15 liter), delivers water under pressure when tap water is not available.	HR-2516

For Replacement Bits,
Call Humboldt: 1-800-544-7220

Core Bits



HR-2508

Hand-Held, Gasoline Powered Drill

For fast, economic drilling—either vertical or horizontal—of concrete/asphalt and/or auger drilling into soil. Easy-to-handle, 22 lbs. overall weight. Quick set-up, easy-to-use, reliable. 2.5 HP, 2-cycle gasoline engine, high performance water swivel, KOR-IT Bit Locator. Accepts up to 6-1/4" diam max. bit.

Description	Model
Hand-held gasoline powered drill.	HR-2508

Shipping wt. 30 lbs. (13.6kg)

Economical Replacement Bits

Ever notice how your bits always seem to break, get dull, or turn up lost just when you need 'em the most? You can beat "Murphy's Law" by buying Replacement Bits now to have on hand at those moments when you can least afford downtime. And, you can \$ave with our discounts by ordering in multiple quantities! Call 1-800-544-7220.

Core Bits, Diamond Tip, for Expander Set.

Diamond tip bits are designed for fast, economical drilling of concrete, moderately reinforced concrete, brick, asphalt and other masonry materials. Bits cut holes approximately 1/16" (2mm) larger than the nominal bit size used. Expander set is designed for quick, easy attachment of 2 to 6-1/2" (51 to 165mm) dia. bits. Two beveled plates tighten expander ring firmly against inside of bit barrel.

Description	Model
Core bits, diamond tip, for expander set. See chart for sizes.	HR-2520 series

Core Bits, Diamond Tip, Permanent Head

Same as HR-2520 series, except HR-2530 has permanently attached head.

Description	Model
Core bits, diamond tip, permanent head. See chart for sizes.	HR-2530 series



HR-2540

Core Bits, Diamond Tip				
Bit Size		Diamond Bits	Expander Sets (for attaching bits)	Diamond Bits with Permanently Attached Head
in.	mm	Bits require expander sets. Order bits and expander sets separately		Does not require expander sets
2	51	HR-2520.2	HR-2540.2	HR-2530.2
2-1/2	64	HR-2520.25	HR-2540.25	HR-2530.25
3	76	HR-2520.3	HR-2540.3	HR-2530.3
3-1/2	89	HR-2520.35	HR-2540.35	HR-2530.35
4	102	HR-2520.4	HR-2540.4	HR-2530.4
4-1/4	108	HR-2520.42	HR-2540.42	HR-2530.42
4-1/2	114	HR-2520.45	HR-2540.45	HR-2530.45
5	127	HR-2520.5	HR-2540.5	HR-2530.5
5-1/2	140	HR-2520.55	HR-2540.55	HR-2530.55
6	152	HR-2520.6	HR-2540.6	HR-2530.6
6-1/4	159	HR-2520.62	HR-2540.62	HR-2530.62
6-1/2	165	HR-2520.65	HR-2540.65	HR-2530.65

For your added convenience, Humboldt accepts American Express, MasterCard and Visa



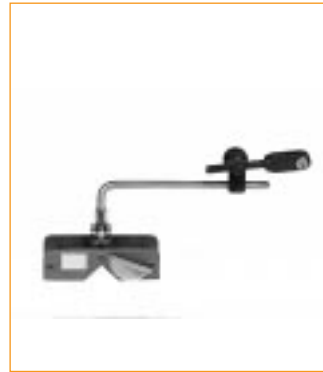
Indicators— Dial, Digital & Accessories



H-4158.1, H-4460, H-4462, H-4463, H-4464



H-4461



H-4470



HM-4469 Series

Dial Indicators

Indicators are built to American Gauge Design specifications for accuracy and are used in field and laboratory testing applications. Dials are high-quality, low-friction type, designed for long life and accurate repeatable readings. Low contact pressure and sensitivity enable the contact point to react immediately in either direction. All dial indicators have continuous graduations and revolution counters that show revolutions of the indicator hand. Dials listed are clockwise rotation; counter-clockwise rotation is available on request.

Dial Indicators, Inches					
Range	Division	Diameter	Brake	Counter-clockwise Model	Model
0.200"	0.0001"	2-1/4"	No	H-4460CC	* H-4460
0.200"	0.0001"	2-1/4"	Yes	H-4461CC	* H-4461
0.300"	0.0001"	2-1/4"	No	H-4462CC	H-4462
0.500"	0.0001"	2-1/4"	No	H-4471CC	H-4471
1.000"	0.0010"	2-1/4"	No	H-4158.1CC	* H-4158.1
2.000"	0.0010"	2-3/4"	No	H-4463CC	* H-4463
3.000"	0.0010"	2-3/4"	No	H-4464CC	H-4464

* Models include two revolution counters

Dial Indicators, Metric					
Range	Division	Diameter	Brake	Counter-clockwise Model	Clockwise Model
8mm	0.002mm	57mm	No	H-4465.08CC	H-4465.08
12mm	0.002mm	57mm	No	H-4465.12CC	H-4465.12
25mm	0.010mm	57mm	No	H-4465.25CC	H-4465.25
50mm	0.020mm	70mm	No	H-4465.50CC	H-4465.50

Magnet Holder with Swivel Adaptor Yoke

Convenient, portable method of mounting dial indicators. Holder's Alnico magnetic base mounts on flat or curved metallic surfaces. Non-magnetic stainless steel holding rod is 6x1/4" (154x6.4mm) and set in hardened ball socket so indicator may be mounted in almost any position.

Description	Model
Magnet holder with swivel adaptor yoke.	H-4470

Electronic Digital Indicators

For use in all Humboldt instrumentation. Switchable inch/metric digital indicators are accurate to ± 0.0001 (0.002mm). Feature instant "0" at any spindle position, lock in maximum reading, LCD display with .305"-high characters, infrared linear encoder, AC power or replaceable batteries. Order HM-4469.02 as replacement indicator for H-4454-series proving rings—see page 38, 109 and 168.

Electronic Digital Indicators				
Range	Division Inches (mm)	Dimension	Peak Hold	Model
0.2500" (6.250mm)	0.0001 (0.002)	2-9/32" diam (72mm)	Yes	HM-4469.02
0.6000" (15.000mm)	0.0001 (0.002)	2-9/32" diam (72mm)	Yes	HM-4469.05
1.0000" (25.400mm)	0.0001 (0.002)	2-9/32" diam (72mm)	Yes	HM-4469.10
2.0000" (50.800mm)	0.0001 (0.002)	1-9/16x9-3/4" (40x146mm)	Yes	HM-4469.20
4.0000" (101.600mm)	0.0001 (0.002)	1-9/16x9-7/4" (40x248mm)	Yes	HM-4469.40

Extension Contact Points		
Length in (mm)	Description	Model
1/4 (6) 1/2 (13) 1 (25)	For applications requiring longer contact points, hardened steel points have polished tip to prevent scratching. Points fit all standard dial indicators.	H-4466.2 H-4466.5 H-4466.10
1-1/2 (38) 2 (51) 3 (76)		H-4466.15 H-4466.20 H-4466.30

Brake is available for most model dial indicators, call 1-800-544-7220

For Technical Assistance
or Professional Sales Service,
Call Humboldt:
1-800-544-7220

Flasks, Cylinders, Beakers



H-4915, H-4916P



H-4911, H-4912P



H-4913

H-4917

Graduated Cylinders

Type	Description	Cap. ml	Model
Glass	Graduated circular divisions, double-numbered, reading up and down. Calibrated to deliver the indicated capacities. Includes plastic guard on 10 to 100ml sizes. Packed one cylinder to a carton.	10	H-4915.010
		25	H-4915.025
		50	H-4915.050
		100	H-4915.100
		250	H-4915.250
Plastic	Polypropylene graduated cylinders are double scale with easy-to-read numbers. Stable base makes cylinders tip- and roll-proof. 10ml size has flared top for easy filling.	500	H-4915.500
		1,000	H-4915.1M
		2,000	H-4915.2M
		10	H-4916P.010
		25	H-4916P.025
		50	H-4916P.050
		100	H-4916P.100
Plastic		250	H-4916P.250
		500	H-4916P.500
		1,000	H-4916P.1M
		2,000	H-4916P.2M

Glass Beakers

Description	Cap. ml	Grad. Range ml	Grad. Interval ml	Model
Griffin low-form beakers for general laboratory use have pourout lip. Design provides greater strength via heavier uniform walls.	50	10-40	10	H-4911.050
	100	20-80	10	H-4911.100
	250	25-200	25	H-4911.250
	400	25-325	25	H-4911.400
	600	50-500	50	H-4911.600
	800	50-750	50	H-4911.800
	1,000	50-950	50	H-4911.1M
	2,000	50-1950		H-4911.2M
	3,000	50-2950		H-4911.3M
	4,000	50-3950		H-4911.4M

Graduated Plastic Beakers

Description	Capacity ml	Model
Low-form laboratory beakers with slightly tapered heavy walls provide firm grip and convenient stacking. Beakers have pourout spout and graduation markings ($\pm 5\%$).	50	H-4912P.050
	100	H-4912P.100
	250	H-4912P.250
	400	H-4912P.400
	600	H-4912P.600
	1,000	H-4912P.1M
	2,000	H-4912P.2M

Erlenmeyer Flasks

Description	Capacity ml	Vented Model	Unvented Model
Narrow-mouth flasks feature heavy-duty rim, volume graduations, tubulation and matte spot for temporarily identifying contents.	250	H-4913.250	H-4917.250
	500	H-4913.500	H-4917.500
	1,000	H-4913.1M	H-4917.1M
	2,000	H-4913.2M	H-4917.2M
	4,000	H-4913.4M	H-4917.4M

Special Rubber Stoppers for Erlenmeyer Flasks

Description	Fits Flask Size ml	Model
Rubber stopper with brass hose fitting for use with Erlenmeyer Flasks.	250	H-4913.250S
	500	H-4913.500S
	1,000	H-4913.1MS
	2,000	H-4913.2MS
	4,000	H-4913.4MS

For your added convenience, Humboldt accepts
American Express, MasterCard and Visa



Beakers, Crucibles & Measures

*Humboldt Testing Equipment
Is Engineered for Precision,
Accuracy, Greater Productivity,
Longer Life & Easier Use.*



H-4920, H-4921



H-4922

H-4922C



H-4923

Aluminum Beakers

Description	Capacity ml	Model
Low-form aluminum laboratory beakers with pour spout. One-piece construction eliminates breakage.	60	H-4920.060
	125	H-4920.125
	250	H-4920.250
	500	H-4920.500
	1,000	H-4920.1M
	2,000	H-4920.2M

Nickel Crucibles

Description	Capacity ml	Model
Nickel crucibles from pure heavy sheet nickel. Suitable for fusions, including those with sodium peroxide, and highly resistant to dilute alkalies.	20	H-4922.020
	30	H-4922.030
	50	H-4922.050
	75	H-4922.075
	100	H-4922.100
	250	H-4922.250
	500	H-4922.500

Nickel Beakers

Description	Capacity ml	Model
Low-form nickel laboratory beakers with pour spout. One-piece construction eliminates breakage.	60	H-4921.060
	125	H-4921.125
	250	H-4921.250
	500	H-4921.500
	1,000	H-4921.1M
	2,000	H-4921.2M

Nickel Crucible Covers

Description	Capacity ml	Model
Flat-style nickel crucible covers with depression in center for centering on crucibles. Extension on one side for handle.	20	H-4922C.020
	30	H-4922C.030
	50	H-4922C.050
	75	H-4922C.075
	100	H-4922C.100
	250	H-4922C.250
	500	H-4922C.500

Stainless Steel Measures

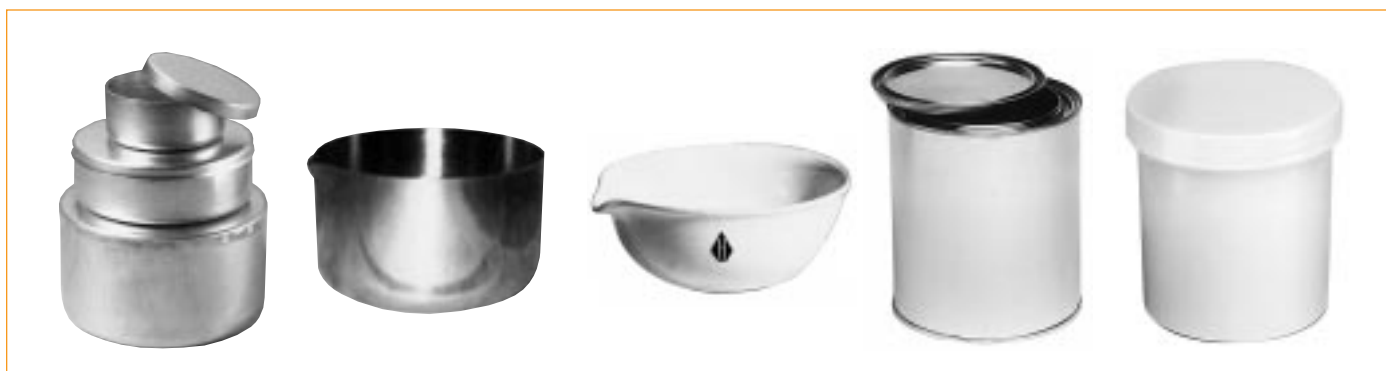
Description	Capacity ml	Model
Measures feature convenient handle and graduations in milliliters and ounces on inside.	500	H-4923.500
	1,000	H-4923.1M
	2,000	H-4923.2M

NOTE: If no shipping weight is listed, item weighs 5 lbs. or less.



For Technical Assistance
or Professional Sales Service,
Call Humboldt:
1-800-544-7220

Moisture Boxes, Evaporating Dishes & Plastic Jars



H-4926, H-4928, H-4929

H-4924

H-4930

H-4184

H-4914 Series

Aluminum Moisture Boxes

Description	Dia. in. (mm)	Height in. (mm)	Model
Seamless aluminum flat bottom, straight side box has tight fitting cover that fits bottom of box also. Sample is protected from exposure during weighing operations.	2 (51)	7/8 (22)	H-4926
	2-1/2 (64)	1-3/4 (44)	H-4927
	3 (76)	1 (25)	H-4928
	3-1/2 (89)	2 (51)	H-4929

Plastic Jars with Caps

Description	Capacity oz (g)	Model
White plastic jar with cap; 12 per pack.	4 oz (113.4g)	H-4914.04
	8 oz (226.8g)	H-4914.08
	16 oz (453.6g)	H-4914.16

Nickel Evaporating Dishes

Description	Cap.	Top Dia. in. (mm)	Height in. (mm)	Model
Heavy gauge pure nickel dishes have straight sides, flat bottom, pour lip.	40ml	2-1/4 (57)	1 (25)	H-4924.040
	100ml	2-3/4 (70)	1-3/8 (35)	H-4924.100
	200ml	3-3/8 (86)	1-13/16 (46)	H-4924.200
	300ml	3-7/8 (98)	2-1/4 (57)	H-4924.300

Sample Can

For storing and transporting sample materials, 1qt.-capacity (.87L) can has friction-type cover. Dimensions: 4-1/8" dia. x 4-7/8" (105x124mm)

Description	Model
Sample can.	H-4184

Porcelain Evaporating Dishes

Description	Cap.	Top Dia. mm	Height mm	Model
Shallow porcelain dish has pour lip, glazed inside, partly glazed outside.	120ml	90	37	H-4930.120
	250ml	115	45	H-4930.250
	765ml	185	54	H-4930.765
	1,285ml	215	63	H-4930.M1285

Field Can

For receiving, transporting and storing samples, 1 gal.-capacity (3.48L) can adequately holds all material from average-size density hole. Has friction-type lid. Dimensions: 6-1/2" dia. x 7" (165x178mm).

Description	Model
Field can.	H-4183



Pans



H-3725



H-4308, H-4309



H-3967S



H-3996S

Moisture and Immersion Pans

Applications	Description	Size	Shpg. Wt. lbs. (kg)	Specifications	Model
Air drying wet coal test samples	Galvanized iron with wire-bound rolled top edges. Features 2 drop handles, straight sides.	18x18x1-1/2" deep (457x457x38mm)	10 (4.5)	ASTM D2234, D2961	H-3700
General lab work	Same as H-3700, except with tapered sides for nesting.	18x18x3" deep (457x457x76mm)	12 (5.4)	—	H-3705
Total moisture determination	Same as H-3700	24x24x4" deep (610x610x102mm)	20 (9)	ASTM D346, D2013, D2234	H-3710
Oven drying asphalt samples	Same as H-3700, except with tapered sides for nesting.	10x20x3" deep (254x508x76mm)	9 (4.1)	—	H-3723
Slump tests, storage, etc.	Same as H-3700, except with tapered sides for nesting.	24x24x3" deep (610x610x76mm)	18 (8.2)	ASTM C192	H-3725
Aggregate and soil samples	Welded steel construction with open chute end simplifies transfer or bag loading. Front swing-down handle folds inside pan to permit criss-cross stacking. Tapered scoop section controls flow.	15x38x4" (381x96x192mm)	14 (6.4)	—	H-4308
		12x20x4" (305x508x102mm)	9 (4.1)		H-4309

Stainless Steel Rectangular Pans

Dimensions	Ship. Wt.		Model
	lbs.	kg.	
8x5-1/4x4-1/2"D (203x133x114mm)	3	1.4	H-3981S
10-1/2x5-1/2x4-1/2"D (267x40x114mm)	4	1.8	H-3986S
13-1/2x6-3/4x5"D (343x71x127mm)	5	2.3	H-3967S
22x6-1/2x5-1/4"D (559x165x133mm)	6	2.7	H-3993S
15-1/2x8x7"D (394x204x178mm)	6	2.7	H-3996S

NOTE: If no shipping weight is listed, item weighs 5 lbs. or less.



Pans & Bowls



H-4936



H-4940



H-4352 Series

Round Mixing Bowls and Pans

Material	Size and Volume (Dia. x H)	Model
Stainless	7-1/4x3" (198x76mm); 1-1/2 qt. (1.4L)	H-4936
	9-1/2x3-1/2" (241x89mm); 3 qt. (2.8L)	H-4937
	12-1/2x5-1/2" (318x140mm); 8 qt. (7.6L)	H-4938
	10-3/4x4-3/4" (273x121mm); 5-1/2 qt. (5.2L)	H-4939
	17-1/2x6-1/2" (444x165mm); 16 qts. (13.9L)	H-4939.5
Aluminum	9x1-1/2" (228x38mm)	H-4940.2
	10x1-1/2" (254x38mm)	H-4940.4
	12x1-1/2" (304x38mm)	H-4940.6
	15x1-1/2" (381x38mm)	H-4940.8

Rectangular Mixing Pans

Material	Size (LxWxD)	Model
Stainless	10-3/8x6-3/8x2-1/2" (264x162x64mm)	H-3969
Tin	8x5-1/4x4-1/4" (203x133x108mm)	H-3981
Stainless	20-3/4x12-3/4x2-1/2" (527x323x63mm)	H-4352.2
	20-3/4x12-3/4x4" (527x324x102mm)	H-4352.4
	20-3/4x12-3/4x6" (527x324x152mm)	H-4352.6
Stainless	13-7/8x12-3/4x2-1/2" (346x323x63mm)	H-4353.2
	13-7/8x12-3/4x4" (346x323x102mm)	H-4353.4
	13-7/8x12-3/4x6" (346x323x152mm)	H-4353.6
Stainless	10-3/8x12-3/4x2-1/2" (264x342x64mm)	H-4354.2
	10-3/8x12-3/4x4" (264x342x102mm)	H-4354.4
	10-3/8x12-3/4x6" (264x342x152mm)	H-4354.6
Stainless	6-7/8x12-3/4x2-1/2" (174x342x64mm)	H-4355.2
	6-7/8x12-3/4x4" (174x342x102mm)	H-4355.4
	6-7/8x12-3/4x6" (174x342x152mm)	H-4355.6
Stainless	14-7/8x10-1/4x2" (376x269x50mm)	H-4356.2
	16-1/8x11-1/8x2-1/4" (409x282x57mm)	H-4356.4
	18-1/8x12-3/8x2-3/8" (460x314x60mm)	H-4356.6
Aluminum	15-3/8x10-7/8x2-3/8" (390x276 x60mm)	H-4351.2
	17-5/8x11-3/4x2-3/8" (447x298x60mm)	H-4351.4
	25-3/4x17-3/4x3-1/2" (654x450x89mm)	H-4351.6
	8x8x2" (203x203x51mm)	H-4941
Tin	8-1/2x4-1/2x2-1/2" (216x114x64mm)	H-4934
	12x8x1" (305x203x25mm)	H-4935
Bakalon	18x13x1-7/8" (457x330x47mm)	H-4359



Scoops & Trowels



H-3727



H-3729, H-3731, H-3732, H-3734



H-3730



H-3735

Scoops

One-piece heavy-duty die-cast aluminum, stainless steel and plastic scoops are designed to handle concrete, sand, soils, etc. in laboratory or field.

Scoops									
Scoop No.	Nose	Material	Bowl Vol./ Water (oz/cu. in.)	Bowl Dimensions			Overall Length	Teflon® Coated Model	Model
				Length	Width	Depth			
—	Flat	Plastic	67 (115.5)	9" (228mm)	4" (102mm)	5-1/2" (139mm)	9" (228mm)	—	H-3727
1	Round	Aluminum	13.5 (24.4)	6-3/4" (172mm)	4" (102mm)	2-1/2" (64mm)	10" (254mm)	H-3729TC	H-3729
—	Square	Aluminum	6.7 (12.2)	6" (152mm)	3-3/4" (95mm)	2" (51mm)	9-1/4" (235mm)	H-3730TC	H-3730
2	Round	Aluminum	20 (36.6)	8-1/4" (210mm)	5-1/4" (133mm)	3" (76mm)	12-1/4" (311mm)	H-3731TC	H-3731
3	Round	Aluminum	33 (61.02)	10-1/4" (260mm)	5-3/4" (146mm)	3-1/2" (89mm)	14-1/2" (368mm)	H-3732TC	H-3732
—	Round	Stainless steel	3.3 (6.1)	5" (114mm)	2-1/2" (63mm)	1" (25.4mm)	9" (228mm)	H-3734TC	H-3734
—	Flat	Stainless steel	6.6 (12.2)	5-1/2" (139mm)	3" (76mm)	1-1/2" (38mm)	9.3" (236mm)	H-3735TC	H-3735
—	Flat	Stainless steel	29 (53)	8" (203)	5-1/2" (139mm)	2-1/2" (63mm)	13-1/2" (343mm)	H-3736TC	H-3736
—	Curved	Stainless steel	—	2-1/2" (635mm)	2-1/2" (635mm)	—	9" (228mm)	H-3738TC	H-3738

Trowels		
Description	Size (W x L)	Model
Plasterer-type trowel's flat rectangular blade is fastened to the mounting and wood handle with stainless steel pins.	4-1/2x10" (114x254mm)	H-3762
Forged steel trowel for mixing cement batches, filling molds, etc., has flat pointed blade and wood handle.	2-3/4x5" (70x127mm)	H-3760
	5-1/4x10" (133x254mm)	H-3780
Forged steel trowel for striking off molds, etc., has edges ground straight. Meets ASTM C109; AASHTO T106.	2-3/4x5" (70x127mm)	H-3761



H-3760, H-3780



H-3738



NOTE: If no shipping weight is listed, item weighs 5 lbs. or less.

Accessories



H-2727

Hygrometer

Precision hygrometer has temperature gauge and is accurate within ± 3 percent relative humidity from 20 to 85 percent. Unit is tested and calibrated five times in humidity-and-temperature-controlled rooms, monitored by chart recorders. Black metal case is 5-1/4" dia.

Description	Model
Hygrometer.	H-2727

Rain Gauge

Heavy-duty plastic rain gauge is designed to be wall-, fence- or post-mounted (bracket included) or pushed into the ground using the sharp point at the bottom of the inverted cone. Measures to 5.5" (140mm) in .02" gradations for the first 1/2", .05" gradations from 1/2 to 2" and .10 gradations from 2 to 5.5" (.1 to 50mm and .2mm from 50 to 140mm).

Description	Model
Rain gauge.	H-3570

Rubber Gloves

For use in compaction, concrete and general lab work, medium thickness short-form gloves without gauntlets are chemical and abrasion resistant and feature curved fingers and contoured palm for ease while working.

Description	Model
Rubber gloves.	H-3740

Heavyweight Terrycloth Glove

Heavyweight terrycloth glove; one size.

Description	Model
Heavyweight terrycloth glove.	H-3745

Heat-Resistant Gloves

Made with large thumb, fingers and loose-fitting palm with wide gauntlet, gloves feature one-piece full-length palm and finger portions, keeping seams to a minimum.

Description	Model
Heat-resistant gloves.	H-3746



H-3570



H-3740

H-3745, H-3746



H-4973

H-4974

Preparation Knife

Used for sample preparation and general lab work, knife has 6"-long thin, sharp blade and wood handle.

Description	Model
Preparation knife.	H-4973

Spoon

For mixing and transferring soils, handling corrosive chemicals, etc., stainless steel spoon is 13" (330mm) long.

Description	Model
Spoon.	H-4974

Rubber Mallets

For use with unit weight or air entrainment meters. Rubber-headed mallets have wood handles. Meets ASTM C138, C231; AASHTO T121, T152.

Rubber Mallets				
ASTM Weight	Head		Handle Length	Model
	Length	Face diam		
2.10 lbs (0.95 kg)	5" (127mm)	2-1/2" (64mm)	12-3/4" (324mm)	H-4975
1.30 lbs (0.59 kg)	3-3/4" (95mm)	2-1/4" (57mm)	11" (280mm)	H-4976

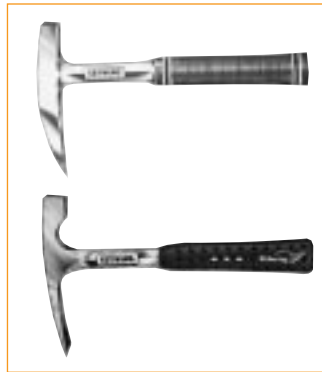


H-4975, H-4976

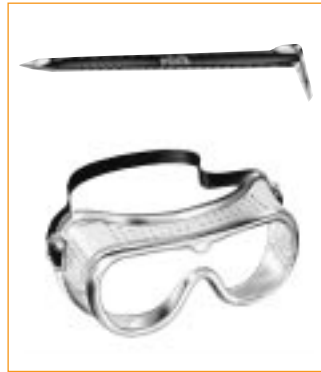
Tools for Rock & Soil



H-4890 (top), H-4891



H-4892 (top), H-4893



H-4899 (top), H-4900



H-4904, H-4906, H-4907, H-4908, H-4910

Tools	
Description	Model
Hoe pick, 26" long; all steel with forged steel head; vinyl hand grip	H-4890
14 oz. Rock pick with pointed tip; nylon-vinyl tip	H-4891
22 oz. Rock pick with pointed tip; leather grip	H-4892
20 oz. Rock pick with chiseled edge; nylon-vinyl grip	H-4893
22 oz. Rock pick with pointed tip, 16-1/4" long	H-4894
3 lb. Crack hammer with painted finish and nylon-vinyl grip	H-4895
Rock chisel 1/2x12", for pockets; vinyl-cushion grip	H-4896
Rock chisel 5/8x9", for wedging and prying; vinyl-cushion grip	H-4897
Rock chisel 1-1/4x8", for splitting.	H-4898
Pry bar, 18" long, with forged I-beam construction	H-4899
Clear safety goggles with soft vinyl frame and replaceable lens	H-4900

Spatula

Flexible stainless steel blades with straight edges and rounded ends. Blade is riveted into wooden handle. H-4907 meets ASTM C185, C780; AASHTO T137.

Description	Model
3/4" (19mm) wide x 4" (102mm) long, straight-edge spatula.	H-4904
7/8" (22mm) wide x 6" (152mm) long, straight-edge spatula.	H-4906
1/2" (13mm) wide x 6" (152mm) long, straight-edge spatula.	H-4907
1-1/4" (32mm) wide x 8" (204mm) long, straight-edge spatula.	H-4908
1-1/4" (32mm) wide x 10" (254mm) long, straight-edge spatula.	H-4910

Digital Caliper

May be used for outside, inside, depth and step measurements up to 6" (150mm) in .001" increments. Caliper delivers direct .001" reading and is adjustable to 0.

Description	Model
Dial caliper.	H-2816

Stainless Steel Dial Caliper

Stainless steel dial caliper may be used for outside, inside, depth and step measurements up to 6" in .1" increments. Caliper delivers direct .001" reading and is adjustable to 0.

Description	Model
Stainless steel dial caliper.	H-2817



H-4894 (top), H-4895



H-4897

H-4970



H-2816



H-2817

Shovels, Bottles, Durometers, Mercury Spill Clean-Up Kit



H-4982

Round-Point Shovel

Heat-treated high-carbon steel round-pointed blade has 27" (69cm) D-grip handle and full wooden yoke with steel casing.

Description	Model
Round-point shovel.	H-4982



H-4983

Square-Point Shovel

Heat-treated high-carbon steel 9-3/8x11-1/2" (24x29cm) square-pointed blade with 48" (122cm) handle.

Description	Model
Square-point shovel.	H-4983

Durometers (D Scale)

As required by ASTM D4318, durometer is used to test the hardness of the base of a Liquid Limit Machine. Precision construction delivers lifetime accuracy. Sealed springs maintain load deflection rate to a tolerance of .0004". Other models are also available. Meets ASTM **D4318**, D2240.



H-4222 Series

Durometers			
Type	Applications	Meets ASTM	Model
Type A	Soft rubber, plastics, elastomers, printer's rolls.	D2240	H-4222A
Type B	Harder elastomers, plastics, paper, fibrous materials. Use above 93 Duro A.	D2240	H-4222B
Type C	Medium hard elastomers, plastics Useful to avoid surface marks.	D2240	H-4222C
Type D	Hard rubber, plastics, such as floor materials & bowling balls.	D2240	H-4222D



H-3397

Guth Wash Bottle

Bottle has aspirator bulb with integral passageways and neck-mounted check-valve on a 1,000ml borosilicate Florence flask. Includes bent delivery tube and flexible tubing tip. Flask allows natural grip with either hand. Forefinger closes the opening while the other fingers squeeze the bulb ejecting a stream of liquid.

Description	Model
Guth wash bottle.	H-3397



H-3398, H-3399

Polyethylene Dispensing Bottles

Easy-to-squeeze, resilient bottle is leak-proof dispensing unit. Heavier flow is accommodated by cutting back dispenser tip.

Description	Model
8-oz. (250ml) Polyethylene dispensing bottle.	H-3398
16-oz. (500ml) Polyethylene dispensing bottle.	H-3399

Mercury Spill Clean-up Kit

For recovery and disposal of mercury spills up to 500 grams. Includes all items needed in a critical spill situation in one box: gloves, mercury collector to swab spill, two plastic spatulas for cleaning spill area, absorbent and activator to absorb remaining mercury, plastic bag for disposal and step-by-step instructions.

Description	Model
Mercury spill clean-up kit.	H-3632SK

WARNING: Inhalation of mercury vapor is hazardous to your health. Do not breathe mercury vapor.
 Use mercury only in area with adequate ventilation.
 When mercury must be left exposed to the atmosphere during use, cover exposed mercury with a layer of water to inhibit mercury vaporation.
 Clean up spills immediately.
 Wash hands thoroughly after handling mercury.
 Store mercury in a strong, well-closed container.



Sample Bags, Straightedge, Pi Tape & Transformers



H-4206

Sample Bags

High-count drill cloth bags have sewn seams and cord drawstring. Used to transport samples from field to laboratory.

Description	Model
Sample bag 10x18" (254x457mm).	H-4206
Sample bag 17x32" (432x813mm).	H-4207

Plastic-Lined Sample Bags

Vinyl plastic liner inside outer bag of high-count drill cloth with sewn seams and drawstring is ideal for fine-grained soils, cement and wet material.

Description	Model
Plastic-lined sample bag, 10x18" (254x457mm).	H-4208
Plastic-lined sample bag, 17x32" (432x813mm).	H-4209

Straightedge

For striking-off samples in containers, measures or molds. Ground steel with bevelled edge. Meets ASTM C185, D558, D559, D560, D698; AASHTO T137.

Description	Model
Straightedge, 8". 1/8x1-1/4x8" (3x32x203mm)	H-4144.8
Straightedge, 12". 1/8x1-1/4x12" (3x32x305mm)	H-4144
Straightedge, 16". 1/8x1-1/4x16" (3x32x406mm)	H-4144.16
Straightedge, 24". 1/8x1-1/4x24" (3x32x610mm)	H-4144.24



H-2937, H-2937M

Pi Tape

Manufactured with the precise accuracy as a micrometer, periphery, or Pi, tape is a fast, reliable method for measuring diameter of concrete, soil and asphalt cores and cylinders. One reading provides round and out-of-round diameters within accuracy of .001" (.03mm on metric model) by means of special graduations and vernier scale. Tape is spring steel; graduations and numerals are engraved and acid etched on a ground surface. Tape has diameter range of 2 to 12" (50 to 300mm on metric model). Includes certificate of calibration.

Description	Model
Pi tape.	H-2937
Pi tape, Metric .	H-2937M

Stepdown Transformers

Allows use of 115-volt electrical equipment on 230-volt line current. Features case and core internally connected to third conductor of NEMA standard cord and receptacle for safety. Has 3-conductor 8' 0" (2.4m) line cord and plug on primary side and female receptacle as output connection. Available in 250W, 500W, 750W, 1,000W, 1,500W, 2,000W.

Description	Model
250-watt transformer. Shipping wt. 10 lbs. (4.5kg)	H-1042
500-watt transformer. Shipping wt. 12 lbs. (5.4kg)	H-1042.5
750-watt transformer. Shipping wt. 16 lbs. (7.3kg)	H-1042.7
1,000-watt transformer. Shipping wt. 17 lbs. (7.7kg)	H-1042.10
1,500-watt transformer. Shipping wt. 21 lbs. (9.5kg)	H-1042.15
2,000-watt transformer. Shipping wt. 28 lbs. (12.7kg)	H-1042.20



NOTE: If no shipping weight is listed, item weighs 5 lbs. or less.

Mortar and Pestle



H-17150



H-17270



H-17280



H-17300

Aluminum Moisture Dish

Developed in accordance with specifications for determining moisture in grain, malt, flour, and dried milk. Inverted slip-in cover with beaded edge for tight sealing, can be handled with crucible tongs. Inside diam at top 2-1/4" x 3/4" deep (57mm x 19mm). Drawn aluminum construction. Packed 10 per ctn.

Description	Model
Aluminum moisture dish.	H-17150

Mortar & Pestle (Plattner's)

For crushing small samples of ore. Made of hardened alloy tool steel. Mortar has flat-bottomed cylindrical cavity with removable sleeve for containing crushed material. Mortar: 3" (76mm), O.D. cavity: 1" diam x 1/4" deep (25mm x 6.4mm). Guide sleeve: 1-1/2" (38mm) long. Pestle: 1" diam x 3" long (25x76mm).

Description	Model
Mortar & pestle (Plattner's).	H-17270

Mortar & Pestle

Meets U.S. Pharmacopeia XIX. Made from hardened tool steel in accordance with specifications for Powdered Glass Test. Mortar has a flat-bottomed cylindrical cavity. Mortar: 76.2mm. O.D. cavity: 50.8mm diam x 43.9mm deep; Pestle: 50.4mm diam, 108mm overall length,

Description	Model
Mortar & pestle.	H-17280

Shipping. wt.: 8 Lbs

Mortar & Pestle For Crushing Hard, Tough Substances

Made of hardened alloy tool steel. Pestle has ball-end to fit bottom of mortar cavity. Mortar: 3x3x4-1/2"H (76x76x114mm); bore: 2" diam x 3" deep (51x76mm). Pestle: 9-1/2" (241mm) overall length.

Description	Model
Mortar & pestle for crushing hard, tough substances. Shipping. wt. 16 lbs. (7.3kg).	H-17300
Pestle only. Shipping. wt. 6 lbs (2.7kg).	H-17301
Mortar only. Shipping. wt. 11 lbs (5kg).	H-17302

Mortar and Pestle Compaction Mold

Mortar and pestle compaction mold used to prepare powdered samples to test softening point of resins and other bituminous materials using ring-and-ball method. Mortar, pestle, sleeve, knock-out button and ring support are C.R. steel. Meets dimensions in Fig. 3 of ASTM E28.

Description	Model
Mortar and pestle compaction mold.	H-1675



H-1675



Water Level, Digital Water Bath, Brushes

Humboldt Testing Equipment Is Engineered for Precision, Accuracy, Greater Productivity, Longer Life & Easier Use.



H-1390, H-1392



H-4040 Series



Brushes

Water Bath with Microprocessor-based Temperature Control

Microprocessor-based temperature controller throughout range from ambient up to 180°F (82°C), with accuracy of ±0.1% of input span. Fully insulated, models are available with or without magnetic circulator which assures constant water temperature throughout bath.

- Auto-tuning is fast & effortless
- Dual digital display simultaneously shows set point & process temperature
- Ramp-to-set point handles critical temperature processes smoothly
- Set point range limiting protects process & equipment
- Percent power limit protects components from stress
- Rapid cycling provides fast system response
- Operator lockout guards against unwanted changes

All exposed parts are stainless steel. Front panel is water and corrosion resistant. Samples are supported by a shelf which allows free circulation of 2" of water above and below. Volume: 7.76 gals. (29.398 L). I.D.: 19.5Wx11.5Dx8"H (495.3x292.1x203.2mm).

Description	Model
Water bath with microprocessor-based temperature control, with magnetic circulator. 110V, 60 Hz.	H-1390
Water bath with microprocessor-based temperature control, with magnetic circulator. 220V, 50/60 Hz.	H-1390.4F
Water bath with microprocessor-based temperature control, without magnetic circulator. 110V, 60 Hz.	H-1392
Water bath with microprocessor-based temperature control, without magnetic circulator. 220V, 50/60 Hz.	H-1392.4F

Water Level Indicators

- Easily accesses small openings, holes & shafts that are not always straight

Instruments for determining water levels in drainage operations, dams, reservoirs, embankments, wells, bore holes, underground cavities, or any hydrological/geological work.

Compact, self-contained units feature a jointed design for easy access to difficult openings. Weighted probe is lowered into the opening via high-strength, flexible cable; buzzer & light indicate when water level has been reached; readings taken from marked cable to very tip of probe so less than 1 ml of water is displaced. Probe resists false readings caused by cascading water. Standard models have cables marked in feet, metric models marked in centimeters. Available in three lengths.

Water Level Indicators				
Description	Dimensions inches (mm)	Weight lbs. (kg)	Standard Model	Metric Model
150' (50 meters)	5Wx7.5Hx5D (127x191x127)	3 (1.36)	H-4040.150	H-4040.50M
300' (100 meters)	6.25Wx9.25Hx6D (159x235x152)	5 (2.27)	H-4040.300	H-4040.100M
500' (150 meters)	6.25Wx9.25Hx6D (159x235x152)	6 (2.72)	H-4040.500	H-4040.150M

Brushes

Complete line of brushes for any application.

Brushes					
Description	Handle	Bristle	Bristle Length	Overall Dimension	Model
Table Brush	Wood	Horsehair	2-1/4" x 2" x 8" (57mm x 51mm x 203mm)	13-1/2" (343mm)	H-3776
Wire Scratch Brush*	Wood	Wire No. 26 gauge flat	2" x 2" x 7" (51mm x 51mm x 178mm)	7-3/4" x 2-5/8" (197mm x 67mm)	H-4259
General Cleaning Brush	Plastic	Palmyra barbs	2" x 3" x 4" (51mm x 76mm x 102mm)	8-1/4" (210mm)	H-3639
Mold Cleaning Brush	Wood	Brass Wire	2" x 7/8" x 5-1/4" (25mm x 22mm x 133mm)	10 1/4" (360mm)	H-3800
Sieve Brush, Fine Mesh	Wood	Horsehair	1-1/2" x 1-1/4" diam. (38mm x 32mm)	5-1/4" (133mm)	H-3774
Sieve Brush, Oval Shaped	Wood	Horsehair	2-3/4" x 1-1/8" x 3/4" (70mm x 29mm x 19mm)	10 1/2" (267mm)	H-3799
Sieve Brush, Fine Mesh	Wood	Horsehair	2-1/2" x 1" x 3/8" (64mm x 25mm x 10mm)	10-1/2" (267mm)	H-3770
Sieve Brush, Coarse Mesh	Wire Loop	Wire	1-1/2" x 3/4" x 1/8" (38mm x 19mm x 3mm)	5 1/2" (140mm)	H-3772

*Meets ASTM D559, D560, AASHTO T135, T136, CRD-C593, C594

Skid Resistance, Accelerated Polishing



H-3204

Portable Skid Resistance Tester

Measures friction (skid resistance) on flat, cambered, or gradient road surfaces. Originally developed by the Transport and Road Research Laboratory of Great Britain.

- Compact, easily transported & used in the field
- Can be used in remote locations, independent of any vehicle
- Enclosed bearings & working parts for protection against wear & contamination
- Heavy-duty frame construction
- Adjustable feet on base

A pendulum arm, having a spring-loaded rubber slider on the pendulum foot. Device is placed on the portion of the road surface to be tested. It is then leveled, and the height of the center of suspension of the pendulum is adjusted to a fixed value which is read on a special gauge.

The pendulum is then released from its horizontal position, to swing down freely until the rubber slider contacts the test surface. As the slider travels across the surface for a fixed distance, the pendulum is slowed and a frictionally-constrained pointer affixed to the pendulum arm measures the highest point in the pendulum arc. The position of the pointer is then read on a measuring arc graduated from 0 to 150. Pointer readings indicate the resistance to skidding of the test surface. Dimensions (include carrying case): 31x25.5x9" (787x648x229mm). Meets ASTM E303.

Description	Model
Portable skid resistance tester.	H-3204

Shipping wt. 75 lbs. (34.0kg)

Description, Replacement Parts & Accessories	Model
Rubber slider for H-3204, 1-1/4" (lab use).	H-3207
Rubber slider for H-3204, 3" (field use).	H-3208
Laboratory base plate for H-3204.	H-3206



HW-50201, HW-50201A

Accelerated Polishing Machine

The accelerated polishing machine (British Wheel) is used in the laboratory to determine the amount that aggregate polish through the action of vehicle tires. Standard abrasives are fed with water to the interface of a rubber tire and laboratory prepared test specimens, for a predetermined number of passes under a specified load. After polishing, the friction values are measured using a surface friction tester (H-3204) mounted on a laboratory base plate (H-3206).

The machine is available either to British Standard using a solid tire with Emery powder as the polishing media or the American Standard using a pneumatic tire with silicon carbide as the polishing media. A modification kit is available to convert one method to the other. Unit based on an original design by the Transport and Road Research Laboratory of Great Britain.

- Heavy duty and rigid construction
- Predetermined counter
- Tires easily replaced
- Abrasives and water fed through calibrated instruments
- Control circuits 24 volt for safety

The machine is supplied as standard with all the necessary Specimen Molds, Feeders, Tired wheels and Tools to manufacture specimens and run a test. Expendable materials are readily available to suit customers requirements to complete a standard test. Meets ASTM D3319; AASHTO T279; BS 812 part 114.

Description	Model
Accelerated polishing machine (British Standard), 110V, 60Hz.	HW-50201
Accelerated polishing machine (British Standard), 240V, 50Hz.	HW-50201.5F
Accelerated polishing machine (ASTM Standard), 110V, 60Hz.	HW-50201A
Accelerated polishing machine (ASTM Standard), 240V, 50Hz.	HW-50201A.5F

Shipping wt. 440 lbs. (200 kg)

Description, Abrasives	Model
Silicon carbide, 50 lb box.	HW-50260
Corn emery, 50kg bag.	HW-50240
Flour emery, 25kg bag.	HW-50250
Specimen mold (set of 4).	HW-50215
Mold plate.	HW-50216

Dry Wheel Tracking, Immersion Wheel Tracking



H-3280

Single Dry Wheel Tracking Device

Determines the plastic deformation (rutting) of either site drilled cores, or laboratory prepared slabs of the asphalt wearing course of heavily trafficked roads.

The specimens are tested under controlled conditions of temperature and tire load, similar to those experienced under actual road conditions.

The device is operated via a Windows™ PC software program, and will allow up to six standard 45-minute tests within an eight hour shift. A printed test report shows temperature and rut depth at each of the 45-minute intervals.

Operators have the option of a linear regression of the last 15 minutes of a test—calculated either at five-minute, or one-minute periods—both in tabular and graphical form, with automatic calculation of individual and/or series rates in mm per hour.

- Maximum specimen size: 305x305x50mm
- Simple temperature control to a maximum 70° C
- Specimen controlled to within 0.1°C of set temperature
- Tire size: 200x50mm

This device requires additional conditioning ovens for each temperature requirement of a series, plus a printer for hard copies of test reports.

Description	Model
Single dry wheel tracking device, 115V, 60Hz.	H-3280
Single dry wheel tracking device, 220V, 50Hz.	H-3280.5F

Shipping wt. 617.3 lbs. (280kg)



H-3284

Water Immersion Wheel Tracking Device

Determines the liability of aggregates to strip from the wearing course of a road surface. Of particular value in the assessment of porous asphalts which are becoming widely used.

Laboratory prepared samples, up to three specimens at one time, can be tested. Conditions of water immersed temperature, and the number of passes of a loaded tire are controlled to simulate those experienced under actual road conditions.

The depth of penetration to the point of failure at the center of the sample with respect to time is plotted on a pen chart recorder.

- Maximum specimen size: 407x137x90mm
- Tire load: 18-54x9kg increments
- Tire size: 200x50mm
- Temperature control maximum: 70°C

Description	Model
Water immersion wheel tracking device, 115V, 60Hz.	H-3284
Water immersion wheel tracking device, 220V, 50Hz.	H-3284.5F

Shipping wt. 804.7 lbs. (365kg)



NOTE: If no shipping weight is listed, item weighs 5 lbs. or less.

“How-To” Books, ASTM & AASHTO Reference Books



HT-900 Series

Humboldt “How To” Books Make It Easy for You to Get More Accurate Test Results

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Description	Model
"HOW TO TEST AGGREGATES Sampling, Sample Reduction and Sieve Testing," 8-pages.	HT-900
"HOW TO Test the Liquid limit, Plastic Limit and Plasticity of Soils," 22-pages.	HT-902
"HOW TO Test the Slump of Fresh Concrete," 8-pages.	HT-904
"HOW TO Make a Quantitative Determination of Bitumen Content in Hot-Mixed Paving Mixtures with Vacuum Extraction," 12-pages.	HT-906
"PROCEDURES FOR MARSHALL TESTING of Asphalt Paving Mixtures," 8-pages. "THE MARSHALL METHOD for the Design and Control of Asphalt Paving Mixtures," 62-pages. Two books combined.	HT-908
"RADIATION SAFETY MANUAL for Users of Moisture and Density Measuring Devices Containing Sealed Sources of Radioactive Materials Emitting Gamma and Neutron Radiation," 40-pages.	HT-910
"5001 Series Compaction Control Gages INSTRUCTION MANUAL" for Moisture/Density Gages, 79-pages.	HT-912

ASTM and AASHTO Reference Books

- Musts for construction materials testing and/or particle size analysis

Official publications are available through Humboldt. Current editions will be shipped.

- ASTM, “Annual Book of ASTM Standards,” Available in complete I5-section, 67-volume set with subject and alpha indexes, or separate individual volumes.
- AASHTO, “AASHTO Materials Specifications and Tests,” Available in 2-volume set, or separate individual volumes. Published every four years.

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