

## New Products

**Fluorescence spectrophotometer** (model SF-1) incorporates the optical and photometric equipment in a single bench top unit and provides double monochromators in both the excitation and fluorescence paths. The use of double monochromators greatly reduces the stray light without significant reduction in efficiency. Second-order light present with excitation wavelengths above 400  $\mu$  can be eliminated with the use of an interference filter. Monochromatic light from an a-c 100 watt xenon arc excites liquid samples in square cuvettes at 90 degrees to the optic axis of the emission monochromator, or flat samples such as paper can be used. The fluorescence double monochromator with its higher rejection of scattered light is claimed to improve performance with paper or turbid solutions by reducing the size of the scatter peak to tolerable proportions. Full-scale deflection is obtained with 0.5 part per billion of quinine sulfate, and micro sample attachments are available to reduce the usual 1-ml sample volume to 4  $\mu$ l. The instrument is contained in a case 21 by 22.5 by 15 inches high, except for the arc ballast and recording equipment. A cathode-ray oscilloscope or x-y recorder can be used to display or record excitation or emission spectra.—R.L.B. (Baird-Atomic, Inc., Dept. S-342, 33 University Rd., Cambridge 38, Mass.)

**Plankton sampler** is light weight (about 85 pounds) and may be towed at a speed of 12 knots to determine the plankton population in a given body of water. Its 8-foot titanium and stainless-steel body allows the sampler more potential usefulness (and faster servicing) than the Monel construction of the original model. A descendant of the Gulf III, the sampler's interior contains Monel or stainless-steel netting, a vinyl cup to collect plankton and a calibrated flowmeter to measure the amount

The material in this section is prepared by the following contributing writers:

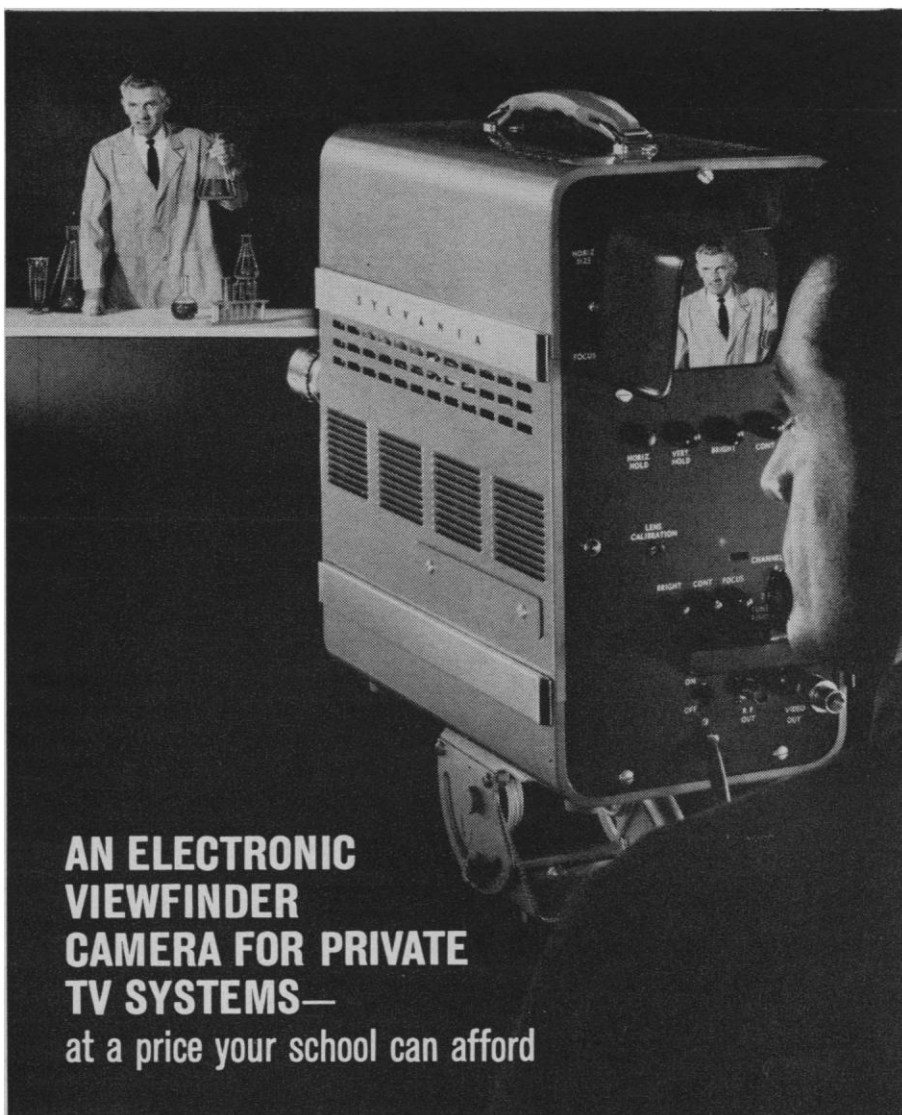
Robert L. Bowman (R.L.B.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

Joshua Stern (J.S.), Basic Instrumentation Section, National Bureau of Standards, Washington 25, D.C. (physics, computing, electronics, and nuclear equipment).

The information reported is obtained from manufacturers and other sources considered reliable. Neither *Science* nor any of the writers assumes responsibility for the accuracy of the information.

Address inquiries to the manufacturer, mentioning *Science* and the department number.

5 OCTOBER 1962



**AN ELECTRONIC VIEWFINDER CAMERA FOR PRIVATE TV SYSTEMS—**  
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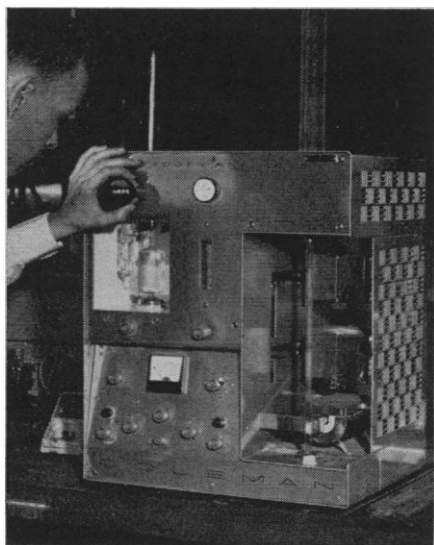
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The instrument is fully as efficient in the control laboratory environment as it has proven under carefully-controlled research laboratory conditions.

Write for the specific method developed by Atlantic Refining's Product Quality Department for nitrogen determination in refinery fluids—Coleman Technical Report ST-187.



COLEMAN INSTRUMENTS, INC.  
MAYWOOD, ILLINOIS

of water which flows through the netting. Remote opening and closing equipment, as well as temperature and pressure telemetering devices, are also available with the sampler. Some of the inherent disadvantages of a towed plankton sampler are overcome with a plankton pump. It is immersible and brings plankton-bearing water to recovery and filtering equipment aboard ship. The pump is a finned, titanium cylinder containing an all-plastic surfaced pump (thus no metallic contamination of the water) and a water-cooled, hermetically sealed electric motor. Support, power, and telemetering wires are inside a thin vinyl output tube. Three hundred gallons per minute and speeds up to 10 knots are possible.—R.L.B. (Oceanic Instruments, Inc., Dept. S376, Houghton, Wash.)

License-exempt strontium-90 solution standard (RS-90A) has a nominal activity of 3000 disintegrations per second in a total volume of three milliliters. The strontium-90 and its yttrium-90 daughter activity is supplied in a 1.0N HCl solution having a carrier concentration of 0.027 g/lit.  $\text{SrCl}_2 \cdot 6\text{H}_2\text{O}$  and 0.022 g/lit.  $\text{YCl}_3 \cdot \text{H}_2\text{O}$ . The solution is contained in a flame-sealed glass ampoule. The new strontium-90 standard enlarges the selection of NBS-certified standards produced by Nuclear-Chicago Corp. to a total of 18, 12 of which do not require specific AEC license. The Nuclear-Chicago model RS-90A solution standard will be of particular interest to investigators without an AEC by-product material license and to those who wish to standardize low-activity counting samples in connection with strontium-90 fallout studies. Price \$32.—R.L.B. (Nuclear-Chicago Corp., Dept. S340, 359 E. Howard Ave., Des Plaines, Ill.)

The model 240 phase-sensitive voltmeter will operate as either a standard vacuum-tube voltmeter or as a phase-sensitive voltmeter. As a standard voltmeter, the instrument will measure either the total signal or the fundamental component of the signal. When operated as a phase-sensitive voltmeter, the in-phase and quadrature components as well as the phase angle may be measured at a single frequency. Internal filters are used to reject noise and harmonics. Full-scale sensitivity may be adjusted between 300  $\mu\text{V}$  and 300 v. The signal is displayed directly in volts on a mirrored-scale panel meter. The internal calibrated phase shifter covers

the full range from 0 to 360 deg without ambiguity. Input impedance to the instrument is 10 megohms.—J.S. (Dytronics Co., Inc., Dept. S404, 5485 N. High St., Columbus 14, Ohio)

The model TE-60 incremental inductance bridge is designed to test inductors in which large d-c and low a-c ripple voltages flow simultaneously. The instrument incorporates a Maxwell-bridge circuit and includes components for generating both a-c and d-c current flow through the inductor being tested. Bridge balance is indicated by panel control consisting of three-decade capacitors, a resistance multiplier, and a Q-balance nulling variable resistor. Inductance range is 0.1 to 1000 mh at 60 volts a-c maximum and 40 amp d-c maximum, and 100 mh to 10 h at 60 volts a-c maximum and 1 amp d-c maximum.—J.S. (Librascope Division, General Precision Inc., Dept. S348, 670 Arques Ave., Sunnyvale, Calif.)

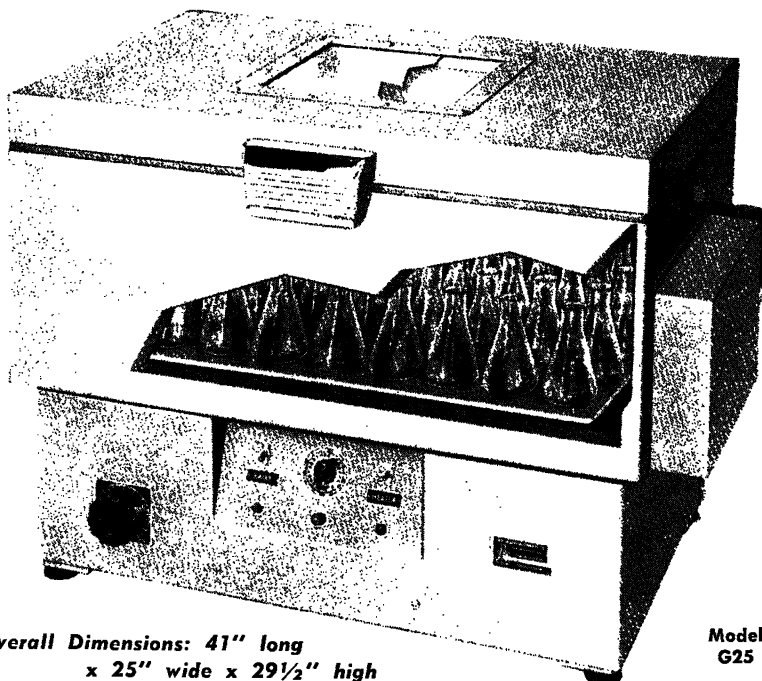
The model 75 portable potentiometer voltmeter consists of a 7.5-inch indicating meter, null galvanometer, resistors, switches, potentiometer, and battery contained in a case 5½ by 13¾ by 12¾ inches. Voltage is potentiometrically adjusted to obtain null indication on the galvanometer when the self-contained potential is opposed by the unknown external potential. Battery power supplied may be varied continuously to obtain full-scale output ranges of 500, 200, 100, 50, 20, 10, 5, and 2 mv; and 20, 10, 5, 2, and 1 v. At null indication on the galvanometer, the wide-scale meter indicates true open-circuit potential of the applied voltage. Galvanometer sensitivity permits resolution of 0.1  $\mu\text{amp}$ . Switching permits direct measurement of an external potential. Input resistance is 5000 ohms when the instrument is used as a direct-reading voltmeter. Accuracy is said to be better than  $\pm 1/3$  percent of full scale.—J.S. (Weston Instruments Division, Daystrom, Inc., Dept. S399, 614 Frelinghuysen Ave., Newark 14, N.J.)

A 2- $\pi$  chromatogram scanner (Strip Scanner I) can be used for thin-layer chromatography, thick gels, and both long and short paper strips. It scans paper strips up to 50 feet long, using a shielded, thin-window, gas-flow detector with a choice of a Mylar window or ultra thin membrane less than 100  $\mu\text{g}/\text{cm}^2$ . If an optional adapter is added, the instrument accepts gelling agents used as an electrophoresis medium for

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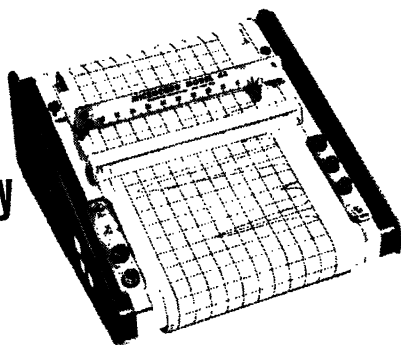
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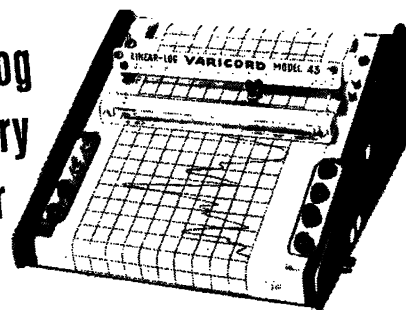


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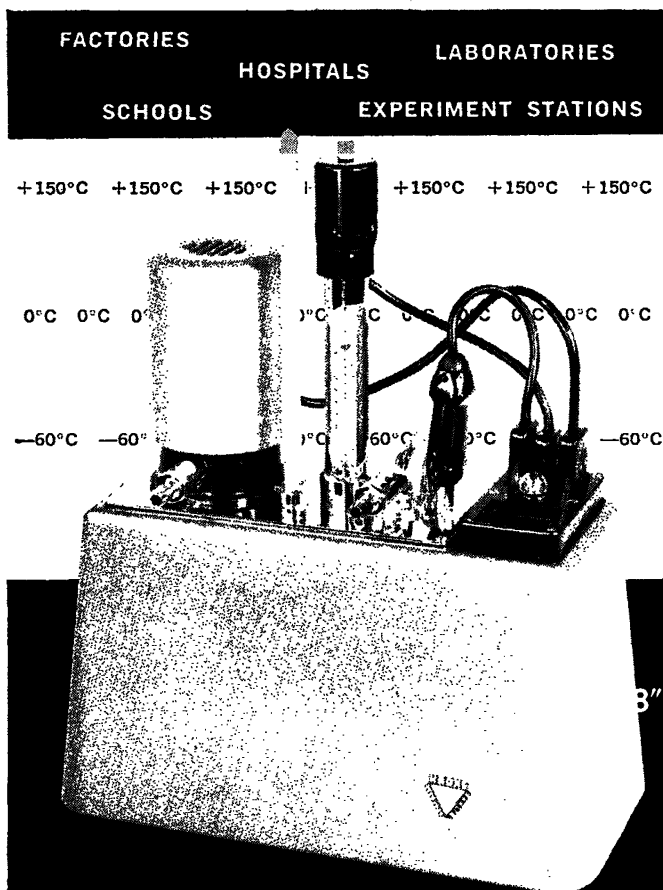
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## MODEL "F" HAAKE CONSTANT TEMPERATURE CIRCULATOR

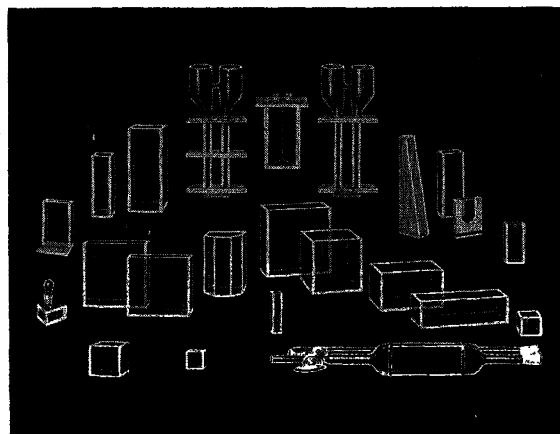
The ideal circulating thermostat for today's crowded laboratories is the Haake Model "F". Due to its light weight and compact design it can easily be moved around and occupies a minimum of space. It is ideal for any type of instrumentation or for ambulatory use with clinical appliances which require temperature control. Some typical applications include such liquid jacketed instruments as spectrophotometers, refractometers, viscometers and blood pH equipment. Accuracy to  $\pm 0.01^\circ\text{C}$ . Pumps  $2\frac{1}{2}$  gal/min. Available with or without suction pump. All models are equipped with a cooling coil for control below ambient temperature and may be used at temperatures to  $-60^\circ\text{C}$  in conjunction with a heat exchanger.

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hemoglobin studies or glass plates used in thin-layer chromatography. The adapter is recessed to prevent movement of the gels during scanning. The system also includes a single-channel chart recorder with ten chart speeds. Standard end-window Geiger-Mueller tubes or scintillation counters may be substituted for the gas flow detector. Bulletin P-302. —R.L.B. (Atomic Accessories, Inc., Dept. S333, 811 W. Merrick Rd., Valley Stream, N.Y.)

**Solid-state digital clock** (model 1200) presents time information on a front-panel, in-line, six-digit projection display. In the standard version, a maximum of 23 hours, 59 minutes, 59 seconds is displayed. Time base is derived from the 60-cy/sec line frequency or from an external one pulse-per-second input. Other models are available with other time ranges. Other options provide: a 100-kcy/sec internal crystal controlled oscillator with 0.001 percent stability and associated countdown logic; buffer amplifiers that permit time-of-day information to be fed to associated equipment for printout or automatic processing; temperature-controlled 100-kcy/sec oscillator with 0.00003 percent stability; preset circuit permitting synchronization of the 100-kcy/sec time base with an external standard; parallel step-function outputs in addition to the standard one pulse-per-second for five digits of the clock's range.—J.S. (Wyle Laboratories, Dept. S405, El Segundo, Calif.)

The model PDA 675F **two-channel probability distribution analyzer** will determine the amplitude probability of one or two independent variables, the probability density of a single variable, or the joint probability of two variables. Sampling rate is adjustable to 25,000 per second. Used with an appropriate digital counter, the instrument measures input voltage levels, compares these with a preset reference voltage, and reads out the number of all samples in which the amplitude of input is less than the reference voltage. For probability densities, readout occurs when the input falls between two comparison levels. In joint probability operation, either coincidence or anticoincidence can be counted. Reference voltage range is selectable in 1-volt steps up to 10 volts, and its level is then set by vernier with accuracy  $\pm 0.1$  percent of the range. Associated with the instrument is a gate generator that serves to select the time interval over which the proba-



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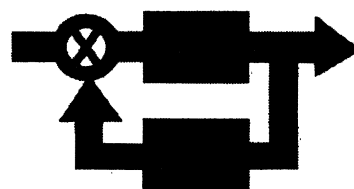
bility samples are taken. Triggered from an external pulse through a flip-flop circuit, the gate generator will delay sampling and then control sampling time for any desired periods so that data may be taken for any preselected portion of a test or trial run.—J.S. (GPS Instruments Co., Inc., Dept. S408, 180 Needham St., Newton 64, Mass.)

**Recorder** uses a D'Arsonval movement and records on pressure-sensitive paper. Deflection of the meter movement is unhindered during the non-recording portion of the instrument's cycle. The record is obtained by a lift plate pressing a stylus, mounted on the meter movement's pointer, against the underside of the pressure-sensitive paper. After the stylus is released, the movement is free to assume a new position. A wide range of tape speeds up to 15 in./hr is available. The chart is 2½ inches wide. Accuracy is said to be  $\pm 2$  percent of full scale for d-c and  $\pm 3$  percent for a-c. Size of the recorder is 5-21/32 by 3-1/32 by 1-11/16 inches.—J.S. (Amprobe Instrument Corp., Dept. S400, 630 Merrick Rd., Lynbrook, N.Y.)

**Miniature core memory unit** is available as a sequential-access buffer, reset buffer or sequential interlace memory. A selection of storage capacities of from 72 to 4096 characters is available with character loading and unloading rates up to 100 kcy/sec. Size varies upward from 30 in.<sup>3</sup> depending on the unit's storage capacity. It will operate at ambient temperatures from  $-55^{\circ}$  to  $+100^{\circ}\text{C}$  and at 100 percent relative humidity. Information is retained in the memory when the power is shut off, and there is little or no power drain when in standby condition. The smallest unit weighs 25 ounces.—J.S. (Di/AN Controls Inc., Dept. S403, 944 Dorchester Ave., Boston 25, Mass.)

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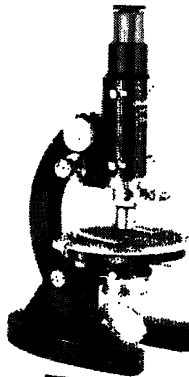
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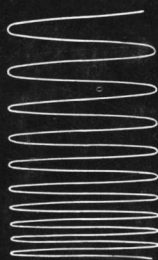
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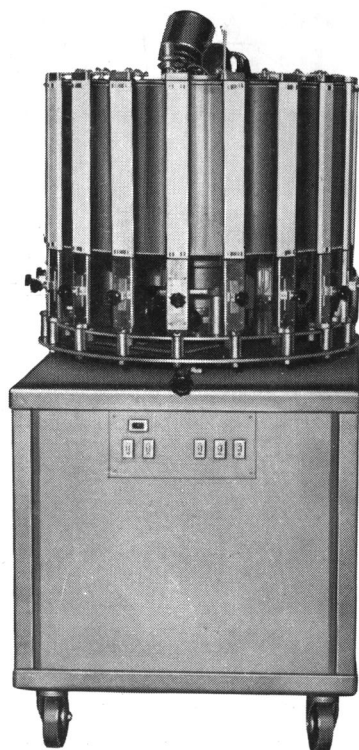
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