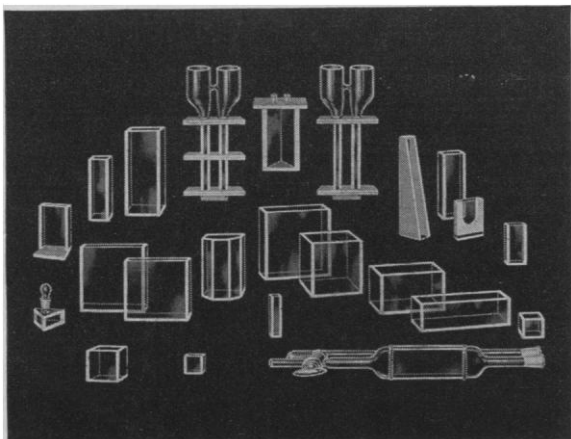


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Specific Activity* mc/mM	Prices	
	50 $\mu$ c†	0.1 mc
4.5	\$ 30	\$ 45
3.4	40	68
1.5	55	100
3.7 mc/g	25	36
0.6 mc/g	25	36
2.1	20	28
55.0	20	28
4.6	45	73
9.5	35	55
3.6	30	38
10.8	—	190/0.5 mc
200.0	30	38
5.2	35	54
1.5	55	95
1.7	\$60/10 $\mu$ c	250
4.2	55	80
2.2	\$28/10 $\mu$ c	130
2.6 mc/g	25	32
2.1 mc/g	30	—
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NET-126	D-Galactose-1-H <sup>3</sup>

Specific Activity* mc/mM	Prices		
	250 $\mu$ c†	1 mc	5 mc
180	\$ 30	\$ 80	\$240
77	30	80	240
12 mc/g	25	70	210
120	30	70	210
22	50	140	420
42	40	100	300

All compounds crystalline unless otherwise indicated.

\* Present lot

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**Phonocardiograph transcriber** permits writing a permanent record of the timing and appearance of heart sounds. The instrument connects by cable with any single channel direct-writing electrocardiograph, and uses the pen-writer and paper of the electrocardiograph to produce the written record. In operation the appropriate leads from the electrocardiograph are removed from the electrodes on the patient and inserted into the proper terminals on the transcriber. Leads from the transcriber are then inserted into the limb electrodes on the right arm, left arm, and right leg. The heart sounds are written in each of three frequency bands. The 20- to 80-cy/sec band is written directly, since the electrocardiograph will accept this range without rectifica-

tion. The 80- to 240-cy/sec and 240- and over bands are rectified and filtered to permit the electrocardiographic apparatus to write them in envelope form. The envelope shows the timing and intensity of the sounds, and provides the necessary diagnostic information. A switch permits selection of the band to be recorded. The instrument includes an R wave discriminator circuit so that in all recordings the R wave of the electrocardiogram is seen as a downward spike, preceding the first heart sound. Earphones are provided, along with the microphone, so that the unfiltered sounds may be heard in the accustomed manner while the record is being made. The circuits used are solid state and all circuits are mounted in printed circuit cards for ease of maintenance and repair if this becomes necessary. Input power required is 117 volts a-c, 50 or 60 cycles, and, since a regulated power supply is part of the unit,  $\pm 10$ -percent changes in line voltage will not affect output. The unit is portable, measuring 8 by 9 by 12 inches and weighing 18 lb.—D.J.P. (Sage Instruments, Inc., Dept. S4, 2 Spring St., White Plains, N.Y.)

The **Flexiscope**, a fiber optic image probe, allows the operator to see internal areas of machinery, engines, and other intricate mechanisms. The Flexiscope is a lightweight, compact unit designed to be held easily by hand. The 0.6-m probe can be inserted into any opening 1.27 cm or larger in diameter. When numerous obstructions cover the area under inspection, the tube can be bent to a radius of as little as 4.4 cm without damaging fibers or sacrificing image quality. The basic unit is operated with either a flexible or semiflexible probe, the latter for applications requiring a limited amount of rigidity. Either style is easily substituted for the other. The probe end has an area of view measuring approximately 6.45 cm<sup>2</sup>, but the probe can be moved about to examine adja-

cent areas. Two tiny light bulbs, and the ends of the probe, provide direct, even illumination, and a right-angle accessory is available for inspecting lateral surfaces. A cast metal housing, to which the probes are attached, contains a focusable eyepiece, batteries for the lighting system, and a three-position switch. The instrument has been constructed to resist corrosion, and the dirt, dust, and splashed oil or water encountered in outdoor or industrial environments. The durability of the tubing permits continuous twisting and bending without damage to fiber optic components. Specifications and suggested applications are available in an illustrated folder, catalog No. D-2042.—R.L.B. (Bausch & Lomb Inc., Dept. S956, Rochester 2, N.Y.)

**Magnetic stirrer with a built-in illumination system** clearly illuminates the interior of any transparent vessel and allows the user to determine end points of titration more uniformly and accurately while stirring. The user can supervise other processes such as solubility and emulsion studies. The instrument is capable of stirring and illuminating simultaneously or of doing either operation independently. A large motor-driven Alnico V magnet revolves close to the top surface to provide exceptionally strong magnetic coupling to provide the necessary force to stir viscous liquids at high speeds. Stepless speed regulation is completely variable from the gentlest movement to violent churning, from 60 to 1500 rev/min. The perforated stainless-steel case ventilates the interior and dissipates heat from the motor and control. A translucent plastic top resists scuffing and is easy to clean. The electrical characteristics are: 115 volts, 60 cycles, a-c, .35 amp. Added features are the dovetail bracket for apparatus setups, and a Teflon-coated stirring magnet.—R.L.B. (Thermolyne Corp., Dept. S959, 568 Kerper Blvd., Dubuque, Iowa)

The 820 series **oscillators** combine automatic phase control and digital techniques to generate stable frequencies up to 1 Mcy/sec with setability said to be five digits. Automatic selection of any frequency in the operating range is obtained by means of front-panel settings. The circuit of the oscillator is basically a phase coherent multiplier in which the input to the multiplier loop is a crystal frequency. The divider in the multiplier loop is a five-decade preset counter, set by the fre-

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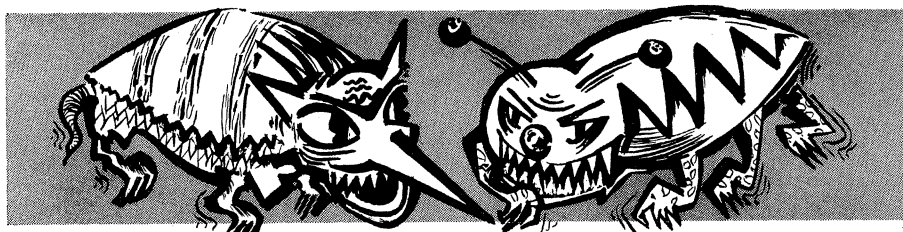
Robert L. Bowman (R.L.B.), with the assistance of Denis J. Prager (D.J.P.), Laboratory of Technical Development, National Heart Institute, Bethesda 14, Md. (medical electronics and biomedical laboratory equipment).

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

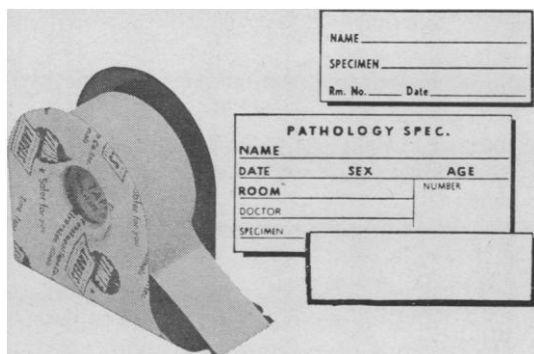
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Editor: Mary Sears, 6x9, 654 + xi pp., 146 illustrations, index, cloth, May 1961. Price \$14.75. AAAS members' cash orders \$12.50. Presented at the International Oceanographic Congress, New York, 31 Aug.—12 Sept. 1959. Published 1961. Second Printing, July 1962.

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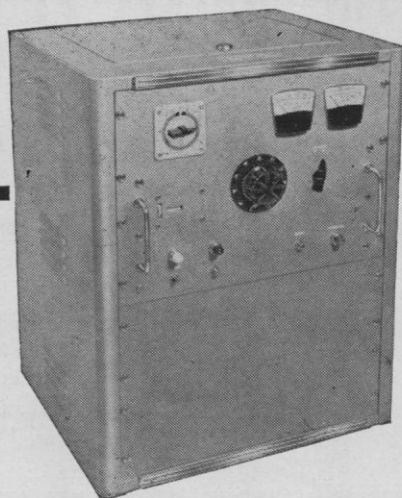
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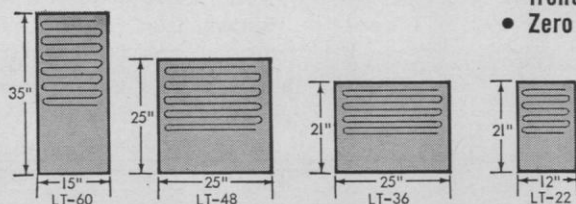
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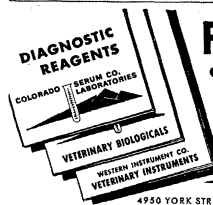
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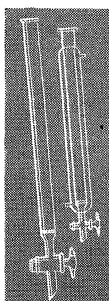
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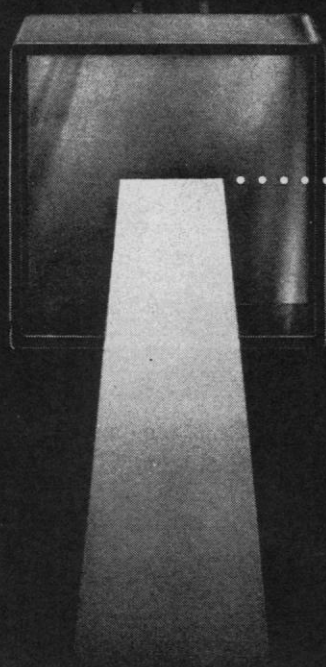
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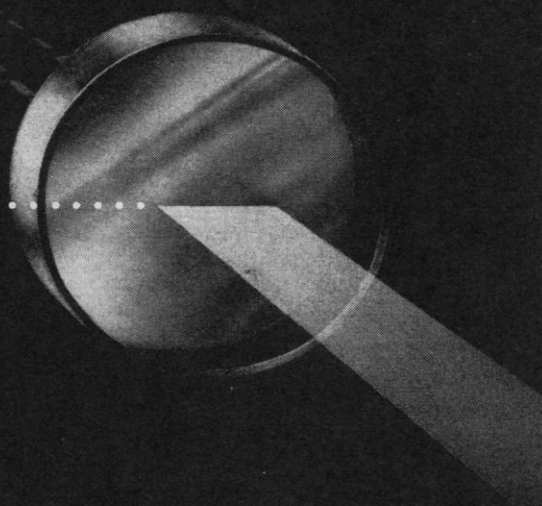


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Special Ultraviolet.....	3900-3999 Å
Half-band Widths.....	4.8-1600 Å
Maximum Transmission.....	25-70%
(Complete Curves Available \$15 Extra)	
Rejection.....	0.1%
Blocking.....	Maximum blocking with reduced thickness for improved signal-to-noise ratio.

For full information, write Adv. Dept. for brochure X-44

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## Hitachi Perkin-Elmer MODEL 139 SPECTROPHOTOMETER

► Monochromator resolution 0.2 millimicrons

► Range 195 to 800 millimicrons

► Line operated

► Excellent stability



*for immediate shipment  
from our stock*

**SPECTROPHOTOMETER, Hitachi Perkin-Elmer Model 139 UV-VIS** (Ultraviolet-Visible Range). Diffraction grating type, compact modular construction, completely a.c. line operated, range 195 to 800  $m\mu$ , meter indicating directly in transmittance and absorbance, for precise research or control use. Excellent design and workmanship provide an instrument of outstanding accuracy, stability, and versatility.

**Wide Range Phototube.** A single tube, with detectors of antimony-cesium and silver-cesium, covers entire range from 195 to 800  $m\mu$ .

**Energy Recording and Kinetic Studies.** The exceptional stability of this instrument makes it especially suitable for these techniques.

**Linear Wavelength Control.** Easily read dial has uniformly spaced divisions over 1 mm wide, corresponding to 0.5  $m\mu$ .

**Meter Scale Expansion**—Absorbance-transmittance meter scale has 10 $\times$  expansion switch.

### Performance Specifications

**Wavelength range**—195 to 800  $m\mu$ .

**Resolution** (monochromator)—0.2  $m\mu$  ( $2\text{\AA}$ ) throughout range.

**Photometric accuracy**—better than  $\pm 0.5\%$  transmittance; better than  $\pm 0.006$  absorbance at 0.4 absorbance.

**Slits**—continuously adjustable from 0.005 to 3.0 mm. Height 20 mm.

**Wavelength accuracy**—better than  $\pm 0.5 m\mu$  throughout range.

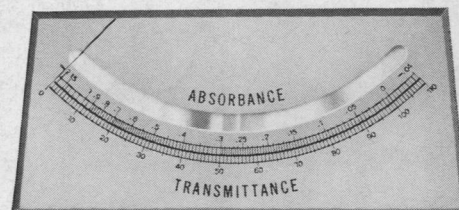
**Wavelength reproducibility**—better than 0.1  $m\mu$ .

**Photometric reproducibility**—better than 0.002 absorbance between 0 and 0.5.

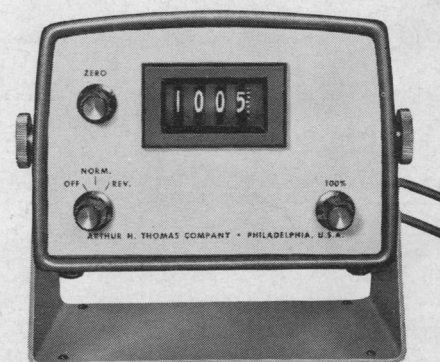
**Cell path**—5 mm, 10 mm, or 20 mm, in standard, 4-place holder.

**9096-E. MODEL 139 SPECTROPHOTOMETER**, as described. Complete with a.c. power supply, installed hydrogen and tungsten lamps, 4-place cell holder, matched set of 4 fused silica 10 mm absorption cells, etc. For 115 volts, 50 or 60 cycles, a.c. .... 2,300.00

Copy of Bulletin 142 sent upon request



Mirrored Meter Scale, 5½ inches long



**THOMAS DIGITAL READOUT**, with numerals approx. ½-inch high, available for use with above. Details on request.



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