

Measuring low light levels

...requires extremely low dark currents coupled with maximum useful sensitivity. The EMI 6256, a 13-stage venetian blind 2" photomultiplier tube has the essential characteristics that are necessary for low light level applications. The unique 10mm cathode-DI geometry, together with the ultra-stable EMI venetian blind design, has resulted in its widely successive.



ful use in astronomy, biology and spectrophotometry. The EMI 6256B has a quartz window and the S-11 cathode (S-13) which has a peak quantum efficiency of 17% at 4.200 A. The EMI type 6256S has 5 to 10 times lower dark current than the 6256B, and should be used when system performance is dark current limited. This type is also available for visible light applications as 9502B/9502S, or with 11 dynodes as 6094B/6094S. Many other EMI photomultiplier tubes are available for special applications from stock in sizes from 1" to 12". EMI photomultiplier tubes are available through qualified engineering representatives located in major marketing areas throughout the United States. A request on your company letterhead will bring you the name of your nearest representative as well as a copy of our latest catalog.



80 Express St., Plainview, L.I., N.Y. 516-433-5900 TWX 516-433-8790 *EMI ELECTRONICS, LTD.

BOOKS RECEIVED

ASTRONOMY & ASTROPHYSICS

Celestial Mechanics and Astrodynamics. Conf. Proc. (New Haven, Conn., Aug. 1963) Victor G. Szebehely, ed. 744 pp. Academic, New York, 1964, \$10.75.

ATOMIC & MOLECULAR PHYSICS

Structure of Matter. By Wolfgang Finkelnburg. 511 pp. (Springer-Verlag, Berlin) Academic, New York, 1964, S14.50.

Biography of an Atom. By J. Bronowski and Millicent E. Selsam. 43 pp. Harper & Row, New York, 1965. 82.95.

BIOPHYSICS & MEDICAL PHYSICS

Transmethylation and Methionine Biosynthesis. Stanley K. Shapiro and Fritz Schlenk, eds. 261 pp. University of Chicago Press, Chicago, 1965. \$12.50.

HISTORY & PHILOSOPHY OF SCIENCE

The Clock We Live On. (2nd ed.) By Isaac Asimov. 172 pp. Abelard-Schuman, New York, 1965. \$3.50.

Albert Einstein and the Cosmic World Order. By Cornelius Lanczos. 139 pp. Interscience, New York, 1965. \$3.95.

The Special Theory of Relativity. By David Bohm. 236 pp. Benjamin, New York, 1965. Cloth \$7.00; paper \$3.95.

Astronomy. Samuel Rapport and Helen Wright, eds. 354 pp. New York University Press, New York, 1964, \$4.95.

Physics. Samuel Rapport and Helen Wright, eds. 333 pp. New York University Press, New York, 1964. \$4.95

A Sophisticate's Primer of Relativity. By P. W. Bridgman. 164 pp. Harper & Row. New York, 1965. Paper \$1.35.

Symbols, Signals and Noise: The Nature and Process of Communication. By J. R. Pierce. 305 pp. Harper & Row, New York, 1965. Paper \$2.25.

Beyond the Edge of Certainty. Essays in Contemporary Science and Philosophy. Robert G. Colodny, ed. 287 pp. Prentice-Hall, Englewood Cliffs, N.J., 1965, \$8.75.

Biographical Memoirs of Fellows of the Royal Society, Volume 10. 388 pp. The Royal Society, London, 1964, \$6.00.

A Philosophy of Science. By W. H. Werkmeister. (Reprint of 1940 ed.) 551 pp. University of Nebraska Press, Lincoln, 1965, Paper \$1.85.

MATHEMATICS

Ordinary Differential Equations. By Philip Hartman. 612 pp. Wiley, New York, 1964, \$20.00. Engineering Systems Analysis, By A. G. J. Macfarlane. 272 pp. (George G. Harrap, London) Addison-Wesley, Reading, Mass., 1965, \$8.50.

The Casino Gambler's Guide. By Allen N. Wilson. 319 pp. Harper & Row, New York, 1965. \$6.95.

Boolean Algebras (2nd ed.). By Roman Sikorski. 237 pp. (Springer-Verlag, Berlin) Academic, New York, 1964, 89.50.

Groups and their Graphs. By Israel Grossman and Wilhelm Magnus. 195 pp. Random House, New York, 1965. Paper \$1.95.

MECHANICS

Friction and Wear of Materials, By Ernest Rabinowicz, 244 pp. Wiley, New York, 1965, \$12.00.

Introduction to the Mechanics of a Continuous Medium. By Leonid Ivanovich Sedov, Transl. from Russian by Scripta Technica. 270 pp. Addison-Wesley, Reading, Mass., 1965, \$12.50.

NUCLEAR PHYSICS

Studies in Penetration of Charged Particles in Matter, 388 pp. National Academy of Sciences—National Research Council, Washington, D. C., 1964, Paper \$7.00.

La Diffraction et la Diffusion des Neutrons. Conf. Proc. (Grenoble, Sept. 1963). 236 pp. Editions du Centre National de la Recherche Scientifique, Paris, 1964. Paper 25 F.

Group Theoretical Concepts and Methods in Elementary Particle Physics. Summer School Lectures (Istanbul, July-Aug-1962) Feza Gürsey, ed. 425 pp. Gordon & Breach. New York, 1964. Regular edition \$19.50; professional edition \$12.50.

Physics of Nuclear Kinetics. By G. Robert Keepin. 435 pp. Addison-Wesley, Reading. Mass., 1965. \$12.50.

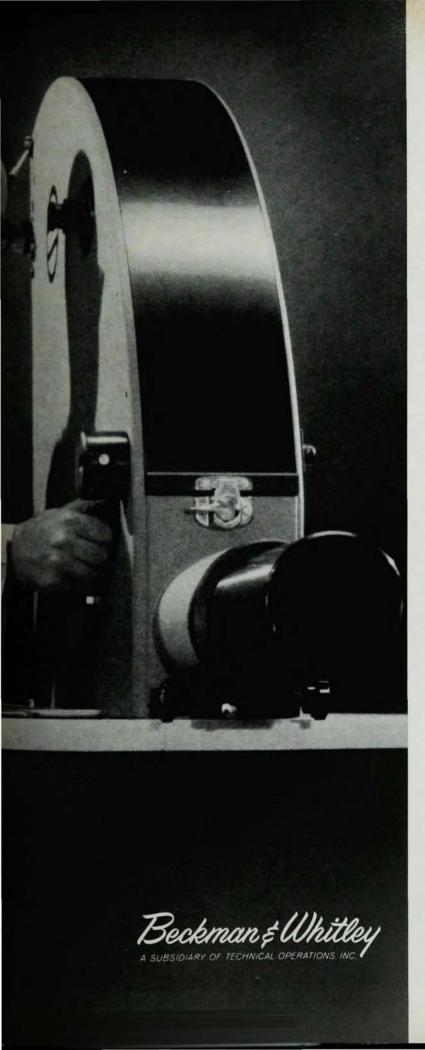
Final-State Interactions. By John Gillespie. 104 pp. Holden-Day, San Francisco, 1965. 86.95.

NUCLEAR POWER & TECHNOLOGY

Principles of Radiation Protection By G. Eaves. 185 pp. Gordon & Breach, New York, 1964. \$8.25.

Economie et Perspectives de l'Energie atomique. By J. Andriot. 276 pp. Dunod. Paris, 1964. Paper 18 F.

Numerical Methods of Reactor Analysis. By Melville Clarke, Jr. and Kent F. Hansen. 340 pp. Academic, New York, 1964. \$10.50



Looking at transient events?

This new camera gives you 120 pictures at rates over 20,000,000 frames per second!

The new Beckman & Whitley 189B Synchronized Framing Camera records at rates from 250,000 to 20,300,000 pictures per second. It is designed to meet the special needs of scientists studying lasers and laser effects, hypervelocity impact, plasmas, shocks, and detonation phenomena.

The camera is more than $2\frac{1}{2}$ times faster than any other rotating mirror camera and records 120 pictures per run, each resolved to 32 lines per millimeter. Exposure times are as short as 50 nanoseconds.

The basic design of Model 189B is similar to the widely used Model 189A. However Model 189B is four times faster and provides almost five times as many pictures. In addition, Model 189B optics are designed so that there is no blind time between frames and the camera records all of the event which occurs during the recording period.

Three different interchangeable rotating mirrors and four different interchangeable objective lenses are offered with the camera. This makes it possible to record at a wide range of speeds and provides great flexibility in selection of object distance and magnification.

For portable use the entire Model 189B system . . . camera, controls, light source, pulse units . . . is available integrated in a mobile instrument cart. For remote operation or permanent installation all Model 189B components can be provided as separate units.

For further information contact Photoinstrument Applications, Beckman & Whitley, Inc., 993 East San Carlos Avenue, San Carlos, California; or Beckman & Whitley Europe, Kettingweg 23, Baarn, Holland.

MÖSSBAUER EFFECT ANALYZERS

Direct Plotting Systems

Multichannel Analyzer Accessory Systems

Teaching Systems

Custom-Designed Systems



1 cm/sec in constant velocity mode

5 cm/sec in constant acceleration mode

Fully automatic velocity control program with switch-selected minimum velocity, maximum velocity, and number of increments

Analog or Digital recording

Electromagnetic velocity transducer

Highest accuracy and reproducibility of velocity

Manufactured by ELRON Electronic Ind., Ltd. Haifa, Israel

United States Sales, Service, and Complete Applications Engineering by Linear Alpha, Inc.

manufacturer of SYNTEC/150

The World's Fastest Multichannel Analyzer



for literature and prices contact

LINEAR ALPHA, INC.

823 Emerson St., Evanston, Illinois U.S.A. 60201 Phone 312-475-1731 Radioisotopic Power Generation. By William R. Corliss and Douglas G. Harvey, 304 pp. Prentice-Hall, Englewood Cliffs, N. J., 1964. \$14.75.

Physics and Materials Problems of Reactor Control Rods. Symp. Proc. (Vienna, Nov. 1963) 794 pp. International Atomic Energy Agency, Vienna, 1964. Distr. by Nat'l Agency for International Publications, New York. \$15.00.

OPTICS & SPECTROSCOPY

Practical Handbook on Spectral Analysis. By V. S. Burakov and A. A. Yankovskii. Transl. from Russian by R. Hardbottle. Transl. edited by S. Tolansky. 190 pp. (Pergamon. Oxford) Macmillan. New York, 1964. \$12.00.

Polarized Light. By William A. Shurcliff and Stanley S. Ballard. 144 pp. Van Nostrand, Princeton. N.J., 1964. Paper \$1.50.

Mathematical Theory of Optics. By R. K. Luneburg. 448 pp. University of California Press, Berkeley, 1965. \$12.50.

Flame Spectroscopy, Parts 1 & 3 Radu Mavrodineanu; Part 2 by Henri Boiteux. 721 pp. Wiley, New York, 1965. \$42.00. Optical Masers. By George Birnbaum. 306 pp. Academic, New York, 1964. \$9.50.

Nonlinear Optics. A Lecture Note and Reprint Volume. By N. Bloembergen. 222 pp. Benjamin, New York, 1965. Cloth \$9.00; paper \$4.95.

PHYSICS OF FLUIDS

Engineering Aspects of Magnetohydrodynamics. Norman W. Mather and George W. Sutton, eds. 675 pp. Gordon & Breach. New York, 1964. \$34.50 (professional edition, sold to individuals for personal use: \$17.50).

Statistical Theory of Liquids. By I. Z. Fisher. Transl. by Theodore M. Switz. 335 pp. University of Chicago Press, Chicago, 1964, \$12.50.

Turbulent Boundary Layers in Compressible Gases. By S. S. Kutateladze and A. I. Leont'ev. Transl. by D. B. Spalding. 170 pp. Academic, New York, 1964, \$8,50.

Perturbation Methods in Fluid Mechanics. By Milton Van Dyke. 229 pp. Academic, New York, 1964, 87.00.

Cavitation in Real Liquids. Symp. Proc. (Warren, Mich., 1962) Robert Davis, ed. 189 pp. American Elsevier, New York, 1964, \$10.00.

Methods in Computational Physics. Advances in Research and Applications. Vol. 3, Fundamental Methods in Hydrodynamics. Berni Alder. Sidney Fernbach, and Manuel Rotenberg, eds. 386 pp. Academic, New York, 1964. \$13.50.

Mécanique expérimentale des Fluides. Vol. 3, Recueil de Problèmes, By R. Comolet and J. Bonnin. 357 pp. Masson et Cie, Paris, 1964. 76 F. Continuous Measurement of Unsteady Flow. By G. P. Katys. Transl. from Russian by D. P. Barrett, Transl. edited by G. E. Walker. 217 pp. (Pergamon, Oxford) Macmillan, New York, 1964. \$9.00.

The Equilibrium Theory of Classical Fluids. A Lecture Note and Reprint Volume. By Harry L. Frisch and Joel L. Lebowitz. 3 Chapters. Benjamin, New York, 1964. Cloth \$10.00; paper \$5.95.

Theoretical Hydromechanics. By N. E. Kochin, I. A. Kibel', and N. V. Roze. Transl. from Russian by D. Boyanovitch. Transl. edited By J. R. M. Radok. 577 pp. Interscience, New York, 1964. \$20.00.

PLASMA PHYSICS

Advanced Plasma Theory. Course 25, Summer School Proc. (Varenna, July 1962) M. N. Rosenbluth, ed. 266 pp. Academic, New York 1964, \$9.75.

Electron-Stream Interaction with Plasmas. By Richard J. Briggs. 187 pp. M.I.T. Press, Cambridge, Mass., 1964. \$7.50.

Exploding Wires, Volume 3. Conf. Proc. (Boston, March 1964) William G. Chace and Howard K. Moore, eds. 410 pp. Plenum Press, New York, 1964, \$17.50.

SOLID STATE PHYSICS

Physics of Semiconductors. Conf. Proc. (Paris, 1964) 1368 pp. Dunod, Paris, 1964, 145 F.

Semiconductor Controlled Rectifiers: Principles and Applications of p-n-p-n Devices. By F. E. Gentry, F. W. Gutzwiller, Nick Holonyak, Jr., and E. E. Von Zastrow. 383 pp. Prentice-Hall, Englewood Cliffs, N. J., 1964. \$15.00.

The Interaction of Radiation with Solids. Summer School Proc. (Mol, Belgium, Aug. 1963) R. Strumane, J. Nihoul, R. Gevers, and S. Amelinckx, eds. 816 pp. (North-Holland, Amsterdam) Interscience, New York, 1964. \$25.00.

Group Theory and Solid State Physics. A Selection of Papers, Volume 1. Paul H. Meijer, ed. 293 pp. Gordon & Breach, New York, 1964. \$5.95.

Condensation and Evaporation of Solids. Symp. Proc. (Dayton, Ohio, Sept. 1962) Emile Rutner, P. Goldfinger, and J. P. Hirth, eds. 705 pp. Gordon & Breach, New York, 1964. \$38.00.

Advanced Methods of Crystallography, G. N. Ramachandran, ed. 279 pp. Academic, New York, 1964, \$10.50.

Gold, Recovery, Properties, and Applications. Edmund M. Wise, ed. 367 pp. Van Nostrand. Princeton, N.J., 1964, \$12.00.

Physics of Thin Films, Volume 2. Advances in Research and Development. Georg Hass and Rudolf E. Thun, eds. 441 pp. Academic, New York, 1964, \$15.00.

Solid State Physics, Volume 16. Advances in Research and Applications. Frederick Seitz and David Turnbull, eds. 446 pp. Academic, New York, 1964, \$15.50.