

1. Record Nr.	UNINA9911006630803321
Autore	Menzel Donald H
Titolo	Fundamental Formulas of Physics, Volume Two
Pubbl/distr/stampa	Newburyport, : Dover Publications, 2013
ISBN	1-5231-0966-1 0-486-16594-9
Edizione	[1st ed.]
Descrizione fisica	1 online resource (872 p.)
Collana	Dover Books on Physics ; ; v.2
Disciplina	530.15
Soggetti	Mathematics Physics Physique -- Formules
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	DOVER BOOKS ON ENGINEERING; Title Page; Copyright Page; PREFACE; Table of Contents; Chapter 16 - GEOMETRICAL OPTICS; 1. General Considerations; 2. The Characteristic Function of Hamilton (Eikonal of Bruns); 3. First Order Relationships; 4. Oblique Refraction; 5. Ray-Tracing Equations; Bibliography; Chapter 17 - PHYSICAL OPTICS; 1. Propagation of Light in Free Space; 2. Interference; 3. Diffraction; 4. Emission and absorption; 5. Reflection; 6. Scattering and dispersion; 7. Crystal Optics; 8. Magneto-optics and Electro-optics; 9. Optics of Moving Bodies; Bibliography Chapter 18 - ELECTRON OPTICS1. General Laws of Electron Optics; 2. Axially Symmetric Fields; 3. Specific Axially Symmetric Fields; 4. Path Equation in Axially Symmetric Field; 5. Paraxial Path Equations (for e moc2) (See 5.7 for arbitrary electron energies.); 6. Electron Paths in Uniform Fields (e moc2); 7. Focal Lengths of Weak Lenses (e moc2); 8. Cardinal Points of Strong Lenses (e moc2); 9. Electron Mirrors (e moc2); 10. Aberrations (e moc2); 11. Symmetrical Two-Dimensional Fields (e moc2); 12. Deflecting Fields * (e moc2); Bibliography; Chapter 19 - ATOMIC SPECTRA 1. The Bohr Frequency Relation2. Series Formulas; 3. The Sommerfeld Fine Structure Constant for Hydrogen-like Spectra; 4. Coupling; 5. Line Intensities; 6. Theoretical Zeeman Patterns; 7. Nuclear Magnetic

Moments; 8. Formulas for the Refraction and Dispersion of Air for the Visible Spectrum; Bibliography; Chapter 20 - MOLECULAR SPECTRA; 1. General Remarks; 2. Rotation and Rotation Spectra; 3. Vibration and Vibration Spectra; 4. Interaction of Rotation and Vibration : Rotation-Vibration Spectra; 5. Electronic States and Electronic Transitions; Bibliography; Chapter 21 - QUANTUM MECHANICS
 1. Equations of Quantum MechanicsBibliography; Chapter 22 - NUCLEAR THEORY; 1. Table of Symbols; 2. Nuclear Theory; Bibliography; Chapter 23 - COSMIC RAYS AND HIGH-ENERGY PHENOMENA; 1. Electromagnetic Interactions; 2. Shower Theory; 3. Nuclear Interactions; 4. Meson Production; 5. Meson Decay; 6. Geomagnetic Effects; Bibliography; Chapter 24 - PARTICLE ACCELERATORS; 1. General Description and Classification of High-Energy Particle Accelerators; 2. Dynamic Relations for Accelerated Particles; 3. Magnetic Guiding Fields; 4. Particle Acceleration; 5. Phase Stability and Phase Oscillations
 6. Injection and Focusing7. Additional Remarks about Special Accelerators; Bibliography; Chapter 25 - SOLID STATE; Introduction; 1. Crystal Mathematics; 2. Elastic Constants; 3. Dielectrics and Piezoelectricity; 4. Conduction and Thermoelectricity; 5. Superconductivity; 6. Electrostatics of Ionic Lattices; 7. Thermal Vibrations; 8. Dislocation Theory; 9. Semiconductors; 10. Electron Theory of Metals; 11. Miscellaneous; Bibliography; Chapter 26 - THE THEORY OF MAGNETISM; 1. Paramagnetism; 2. Ferromagnetism; 3. Diamagnetism and Feeble Paramagnetism; Bibliography; Chapter 27 - PHYSICAL CHEMISTRY
 1. Chemical Equilibrium

Sommario/riassunto

The republication of this book, unabridged and corrected, fills the need for a comprehensive work on fundamental formulas of mathematical physics. It ranges from simple operations to highly sophisticated ones, all presented most lucidly with terms carefully defined and formulas given completely. In addition to basic physics, pertinent areas of chemistry, astronomy, meteorology, biology, and electronics are also included. This is no mere listing of formulas, however. Mathematics is integrated into text, for the most part, so that each chapter stands as a brief summary or even short textbook of