

CONTENTS

HYDROGEN

Table of the principal energy levels.....	3
Differential cross-section (atomic hydrogen).....	5
Cross-section for the excitation of atomic hydrogen.....	7
Excitation cross-section for the $2^2S_{1/2}$ state of atomic hydrogen.....	9
Cross-section for radiative attachment in atomic hydrogen.....	10
Cross-section for the detachment of electrons from H^- by electron impact....	11
Cross-section for ionization of atomic hydrogen.....	13
Total cross-section for atomic hydrogen.....	15
Differential scattering cross-sections for molecular hydrogen.....	16
Differential elastic scattering cross-sections for molecular hydrogen.....	17
Differential inelastic scattering cross-section for molecular hydrogen.....	19
Cross-section for rotational excitation in H_2	22
Cross-sections for excitation of the 1st vibrational levels (H_2).....	23
Excitation cross-sections for molecular hydrogen.....	24
Dissociation cross-section for molecular hydrogen.....	27
Dissociative attachment cross-sections for H_2 , HD and D_2	29
Resonances in the collisional cross-sections for electrons in hydrogen and deuterium.....	31
Threshold of the total ionization curve for molecular hydrogen.....	33
Total ionization cross-sections for hydrogen and deuterium.....	34
Cross-sections for dissociative ionization (H_2).....	37
Dissociation cross-sections for H_2^+ and D_2^+ ions.....	39
Momentum transfer cross-sections for H_2 and D_2	41
Total cross-sections for molecular hydrogen and deuterium.....	43
Drift velocities of electrons in molecular n -hydrogen.....	45
Drift velocities of electrons in H_2 at high E/N	46
Drift velocities of electrons in para-hydrogen.....	47
Drift velocities of electrons in D_2	48
Ratio D/μ for electrons in H_2	49
Ratio D/μ for electrons in D_2	50
First Townsend ionization coefficient for molecular hydrogen.....	51
First Townsend ionization coefficient for tritium, deuterium and hydrogen....	52

HELIUM

Principal energy levels.....	54
Differential elastic cross-section.....	55
Differential inelastic cross-sections.....	60

Differential inelastic cross-sections for the loss of 21.12 eV	63
Differential inelastic cross-sections. Energy loss 20.6, 21.2 and 23.1 eV	65
Differential total cross-sections (elastic and inelastic)	66
Excitation cross-sections	68
Excitation cross-sections for two metastable levels	69
Excitation cross-sections for various lines	72
Excitation cross-sections for various levels	75
Excitation cross-section for various lines of He ⁺	80
Total excitation cross-sections	83
Resonance in the scattering of electrons	84
Cross-sections for direct excitation of the 2S state of the He ⁺ ion	85
Ionization cross-sections near threshold	86
Threshold of the ionization curve for doubly ionized helium	87
Partial ionization cross-sections	88
Total ionization cross-sections	89
Cross-sections for ionization of the He ⁺ ion	90
Total cross-section for electron scattering by metastable helium	91
Momentum transfer cross-sections	93
Total cross-sections	95
Drift velocities of electrons in helium	96
Ratio D/μ for electrons in helium	98
First Townsend coefficient	99

NEON

Principal energy levels	102
Differential elastic cross-sections	103
Differential inelastic cross-sections	109
Excitation cross-sections for metastable levels	110
Excitation cross-sections of various wavelengths	111
Excitation cross-sections for various $2p$ levels	117
Cross-sections for indirect excitations in neon	119
Excitation cross-sections for the $2p^5 4s (S_2)$ level	120
Total inelastic cross-sections	121
Partial ionization	122
Partial ionization cross-sections	123
Total ionization cross-sections	124
Ionization cross-sections for the Ne ⁺ ion	125
Momentum transfer cross-sections	127
Total cross-sections	128
Drift velocities of electrons in neon	129
Primary ionization coefficient	130

ARGON

Principal energy levels	132
Differential elastic scattering cross-sections	133
Differential inelastic cross-sections	139

Excitation cross-sections for various lines	142
Excitation cross-sections for lines beginning with $2p$ levels	152
Excitation cross-sections for various lines of argon II	153
Total inelastic scattering cross-section	156
Partial ionization	157
Partial ionization cross-sections	158
Total ionization cross-sections	159
Cross-sections for momentum transfer	160
Total scattering cross-sections	161
Drift velocity of electrons in argon	162
Ratio D/μ for electrons in argon	163
First Townsend coefficient	164

KRYPTON

Principal energy levels	166
Differential elastic cross-sections	167
Excitation cross-sections for various lines	169
Excitation cross-sections for the $2p$ levels	171
Partial ionization	172
Partial ionization cross-sections	173
Total ionization cross-sections	174
Momentum transfer cross-sections	175
Total cross-sections	176
Drift velocities of electrons in krypton	177
Primary ionization coefficients	178

XENON

Principal energy levels	180
Differential elastic cross-sections	181
Excitation cross-sections for 2 lines of xenon I	184
Excitation cross-sections for the $2p$ levels	185
Excitation cross-sections for various Xe II lines	187
Partial ionization	189
Partial ionization cross-sections	190
Total ionization cross-sections	192
Momentum transfer cross-sections	193
Total cross-sections	194
Drift velocities of electrons in xenon	195
First ionization coefficient	196