W.E. CLASON

ELSEVIER'S DICTIONARY OF GENERAL PHYSICS

ENGLISH/
AMERICAN
FRENCH
SPANISH
ITALIAN
DUTCH
GERMAN

ELSEVIER'S
DICTIONARY OF GENERAL PHYSICS

IN SIX LANGUAGES

ENGLISH / AMERICAN / FRENCH / SPANISH / ITALIAN

DUTCH AND GERMAN

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AN ENGLISH ALPHABETICAL BASE BY

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PREFACE

When this Dictionary of Physics was being compiled it soon became apparent that it would be impossible to include all the terms referring to the subject. This would have resulted in a most unwieldy book and the author felt obliged to restrict himself to the main definitions of the various branches of physics, from which a host of derived terms has been formed. The International Dictionary of Physics, published by the Van Nostrand Publishing Company of New York has been an excellent guide.

The author has received valuable help from many people both at home and abroad. Special thanks are due to Messrs. De Jong, Van der Weijden, Scholz and Domingo Barragán of the N.V. Philips' Gloeilampenfabrieken Translation Office and to the professors and assistants of the Istituto di Fisica dell'Università di Bologna.

Terms which occur in the author's earlier dictionaries are not repeated as a rule. The author gratefully acknowledges the invaluable assistance of his wife, who, as on past occasions, prepared the text and corrected many of the proofs.

March, 1962

W. E. CLASON

ABBREVIATIONS

ac	acoustics
adj	adjective
adv	adverb
cry	crystallography
ele	electricity
f	feminine
GB	British English
gen	general
m	masculine
magn	magnetism
mec	mechanics
n	neuter
nucl	nucleonics
o	obsolete
opt	optics
phc	physical chemistry
pl	plural
rad	radiation
s	noun, substantive
sl	slang
spe	spectroscopy
the	thermodynamics
US	English, American usage
v	verb

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ORLONDI, G.: Dizionario Italiano-Inglese, Inglese-Italiano.
PALAZZI, F.: Piccolo dizionario della lingua italiana.
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HERZBERGER, M.: Modern geometrical optics.
KASTLER, A.: Optique.
LEMOINE, J. et A. BLANC: Physique générale et expérimentale.
PALACIOS, J.: Física general.
PECHT, J.: Einführung in die Theorie der Elektronenoptik.
PERUCCA, E.: Fisica generale e sperimentale.
POHL, R. W.: Optik und Atomphysik.
ROSSI, G.: Optics.
VAN HEEL, A. C. S.: Inleiding in de optica.
ZWIKKER, C.: Leerboek der optiek.

BASIC TABLE

ENGLISH/AMERICAN

No.	English *GB and US*	Subject	Definition
1	**Abbe condenser**	opt	A compound lens used for directing light through the object of a compound microscope.
2	**Abbe number**	opt	The reciprocal of the dispersive power of a material.
3	**Abbe sine condition**	opt	The relationship $ny \sin\theta = n'y' \sin\theta'$, where n, n' are indices of refraction, y, y' are distances from optical axis, and θ, θ' are angles light rays make with the optical axis.
4	**Abbe theory of the resolution of a microscope**	opt	A theory relating the resolution of the instrument to the wavelength of the light and the aperture of the instrument.
5	**Abel equation**	mec	When a particle falls on a smooth curve, $s = s(z)$ in a vertical plane from $z = z_0$ to $z = z$, the time of descent is $t(z) = \frac{1}{\sqrt{2g}} \int_{z_0}^{z} \frac{s'(z)}{\sqrt{z_0 - z}} \mathrm{d}z$ where g is the acceleration of gravity.
6	**aberration of light**	opt	According to Bradley, the apparent displacement of a star due to the motion of the earth in its orbit.
7	**Abney effect**	opt	A shift in hue which is the result of a variation in purity and, therefore, in saturation.
8	**Abney mounting**	spe	A method for mounting a grating, plateholder and slit on a Rowland circle and moving only the slit to observe different parts of the spectrum.
9	**abridged spectrophotometry**	spe	Spectrophotometry employing continuous spectra sources, but with various narrow band filters placed in the beam of light, under which condition the transmittance or reflectance of the sample is measured.
10	**abscissa**	gen	The horizontal coordinate of a point in a two-dimensional system, commonly rectangular Cartesian, and usually designated by x.

Français *French*	Español *Spanish*	Italiano *Italian*	Nederlands *Dutch*	Deutsch *German*	No.
condenseur *m* d'Abbe	condensador *m* de Abbe	condensatore *m* di Abbe	abbecondensor *m*	Abbe-Kondensor *m*	1
nombre *m* d'Abbe	número *m* de Abbe	numero *m* di Abbe	getal *n* van Abbe	Abbesche Zahl *f*	2
condition *f* des sines d'Abbe	condición *f* de los senos de Abbe	condizione *f* dei seni di Abbe	sinusvoor-waarde *f* van Abbe	Abbesche Sinus-bedingung *f*	3
théorie *f* du pouvoir séparateur du microscope d'Abbe	teoría *f* del poder de resolución del microscopio de Abbe	teoria *f* del potere separatore del microscopio di Abbe	abbetheorie *f* voor het scheidend vermogen van een microscoop	Abbesche Theorie *f* für das Auflö-sungs-vermögen eines Mikroskops	4
équation *f* d'Abel	ecuación *f* de Abel	equazione *f* di Abel	abel-vergelijking *f*	Abelsche Gleichung *f*	5
aberration *f* de la lumière	aberración *f* de la luz	aberrazione *f* della luce	aberratie *f* van het licht	Aberration *f* des Lichtes	6
effet *m* Abney	efecto *m* Abney	effetto *m* Abney	abneyeffect *n*	Abney-Effekt *m*	7
montage *m* d'Abney	montaje *m* de Abney	montaggio *m* di Abney	abney-opstelling *f*	Anordnung *f* nach Abney	8
spectrophoto-métrie *f* réduite	espectrofoto-metría *f* reducida	spettrofoto-metria *f* ridotta	grove spectro-fotometrie *f*	grobe Spektral-photometrie *f*	9
abscisse *f*	abscisa *f*	ascissa *f*	abscis *f*	Abszisse *f*	10

No.	English *GB and US*	Subject	Definition
11	**absolute boiling point**	the	The boiling point on the absolute scale, numerically equal to the boiling point in degrees centigrade plus 273.16°.
12	**absolute concentration**	gen/ phc	The quantity of a substance, or form of energy or other entity that exists in a unit volume, expressed in mass per unit volume (ergs per cubic centimeter), or number of particles (as of atoms, hydrogen-ions, etc.) per unit volume.
13	**absolute density**	mec	Mass per unit volume, understood to be expressed in grams per cubic centimeter when no units are specified.
14	**absolute future of an event**	opt	All events which could be reached by a signal emitted at the event and moving with velocity less than or equal to that of light in a vacuum.
15	**absolute humidity**	phc	The mass of water vapor in a specified volume.
16	**absolute luminance threshold**	opt	The minimum luminance which can be discriminated by the fully dark-adapted eye.
17	**absolute luminosity curve**	opt	A graphical relationship between wavelength of light and the luminous efficiency of radiant flux, expressed in lumens per watt.
18	**absolute past of an event**	opt	All events from which a signal, moving with velocity less than or equal to that of light in a vacuum, could be emitted to reach the event in question.
19	**absolute permeability**	magn	The magnetic flux density divided by the magnetic field strength.
20	**absolute pressure**	mec	The term applied to the true pressure of a substance or system, commonly to distinguish it from partial pressure, gage, etc.
21	**absolute purity threshold**	opt	The minimum purity perceptible in contrast with white, by the light-adapted eye.

Français *French*	**Español** *Spanish*	**Italiano** *Italian*	**Nederlands** *Dutch*	**Deutsch** *German*	**No.**
point *m* absolu d'ébullition	temperatura *f* absoluta de ebullición	punto *m* assoluto di ebollizione	absoluut kookpunt *n*	absoluter Siedepunkt *m*	11
concentration *f* absolue	concentración *f* absoluta	concentrazione *f* assoluta	absolute concentratie *f*	absolute Konzentration *f*	12
densité *f* absolue	densidad *f* absoluta	densità *f* assoluta	absolute dichtheid *f*	absolute Dichte *f*	13
futur *m* absolu d'un événement	futuro *m* absoluto de un evento	futuro *m* assoluto di un evento	absolute toekomst *f* van een voorval	absolute Zukunft *f* eines Ereignisses	14
humidité *f* absolue	humedad *f* absoluta	umidità *f* assoluta	absolute vochtigheid *f*	absolute Feuchtigkeit *f*	15
seuil *m* de luminance absolue	umbral *m* de luminancia absoluta	soglia *f* di luminanza assoluta	absolute luminantie-drempel *m*	absolute Helligkeits-schwelle *f*	16
courbe *f* de luminosité absolue	curva *f* de luminosidad absoluta	curva *f* di luminosità assoluta	absolute helderheids-kromme *f*	absolute Helligkeits-kurve *f*	17
passé *m* absolu d'un événement	pasado *m* absoluto de un evento	passato *m* assoluto di un evento	absoluut verleden *n* van een voorval	absolute Vergangenheit *f* eines Ereignisses	18
perméabilité *f* absolue	permeabilidad *f* absoluta	permeabilità *f* assoluta	absolute permeabiliteit *f*	absolute Permeabilität *f*	19
pression *f* absolue	presión *f* absoluta	pressione *f* assoluta	absolute druk *m*	absoluter Druck *m*	20
seuil *m* de pureté absolue	umbral *m* de pureza absoluta	soglia *f* di purezza assoluta	absolute kleur-zuiverheids-drempel *m*	absolute Farb-reinheits-schwelle *f*	21

No.	English *GB and US*	Subject	Definition
22	**absolute space-time**	mec	A fundamental concept underlying Newtonian mechanics is that there exists a preferred reference system to which all measurements should be referred. This is known as absolute space-time.
23	**absolute temperature**	the	a) The temperature measured on the thermodynamic scale. b) The temperature measured from the absolute zero (—273.16°C).
24	**absolute temperature scale**	the	Any temperature scale whose zero is the absolute zero of temperature, —273.16°C or —459.7°F.
25	**absolute zero**	the	The temperature at which a system would undergo a reversible isothermal process without transfer of heat.
26	**absorbance**	opt	The common logarithm of the absorptance.
27	**absorbancy**	opt	The common logarithm of the reciprocal of the transmittancy.
28	**absorbent**	mec	A substance, material, or solution able to imbibe, or attract into its mass, or trap liquids or gases, commonly to remove them from a given medium or region.
29	**absorber**	mec	In general, a medium, substance or functional part that takes up matter or energy.
30	**absorbing duct, lined duct, silencer**	ac	Tubes used in ventilator and exhaust systems to provide a high degree of attenuation for audiofrequency waves while offering low resistance to continuous flow of air.
31	**absorptance, absorption factor**	rad	In any absorbing system, especially in the case of absorption of radiation, the ratio of the total unabsorbed radiation to the total incident radiation, or to the total radiation transmitted in the absence of the absorbing substance.
32	**absorption**	rad	The process whereby the total number of particles emerging from a body of matter is reduced relative to the number entering, as a result of interaction of the particles with the body.
33	**absorption band**	spe	A region of the absorption spectrum in which the absorptivity passes through a maximum or inflection.

Français *French*	**Español** *Spanish*	**Italiano** *Italian*	**Nederlands** *Dutch*	**Deutsch** *German*	**No.**
espace-temps *m* absolu	espacio-tiempo *m* absoluto	spazio-tempo *m* assoluto	absolute ruimte-tijd *m*	absolute Raum-Zeit *f*	22
température *f* absolue	temperatura *f* absoluta	temperatura *f* assoluta	absolute temperatuur *f*	absolute Temperatur *f*	23
échelle *f* de température absolue	escala *f* de temperatura absoluta	scala *f* di temperatura assoluta	absolute temperatuur-schaal *f*	absolute Temperatur-skala *f*	24
zéro *m* absolu	cero *m* absoluto	zero *m* assoluto	absoluut nulpunt *n*	absoluter Nullpunkt *m*	25
absorbance *f*	absorbencia *f*	assorbenza *f*	absorbantie *f*	Absorbanz *f*	26
degré *m* d'absorption	grado *m* de absorción	grado *m* di assorbimento	absorptiegraad *m*	Absorptions-grad *m*, Reinabsorp-tionsgrad *m*	27
absorbant *m*	absorbente *m*	assorbente *m*	absorbens *n*, absorbeer-middel *n*	Absorbens *n*	28
absorbeur *m*	absorbedor *m*	assorbitore *m*	absorptiemiddel *n*	Absorber *m*	29
silencieux *m*	silenciador *m*	marmitta *f*, tubo *m* silenziatore	geluiddemper *m*	Schall-dämpfer *m*	30
facteur *m* d'absorption	factor *m* de absorción	fattore *m* di assorbimento	absorptie-factor *m*	Absorptions-faktor *m*	31
absorption *f*	absorción *f*	assorbimento *m*	absorptie *f*	Absorption *f*	32
bande *f* d'absorption	banda *f* de absorción	banda *f* di assorbimento	absorptieband *m*	Absorptions-band *n*	33

No.	English *GB and US*	Subject	Definition
34	**absorption coefficient, Bunsen coefficient**	phc	The volume of gas under standard conditions of temperature and pressure which is absorbed by a unit volume of gas solution.
35	**absorption curve**	rad	The graphical relationship between thickness of absorbing material and intensity of transmitted radiation.
36	**absorption discontinuity**	rad	A discontinuity appearing in the absorption coefficient of a substance for a particular type of radiation when expressed as a function of the energy (or frequency or wavelength) of this radiation.
37	**absorption edge**	spe	The wavelength corresponding to an abrupt discontinuity in the intensity of an absorption spectrum, notably an x-ray absorption spectrum, which gives the appearance of a sharp edge in the photograph of such a spectrum.
38	**absorption index**	opt	In traversing perpendicularly a thin layer of absorbing material of thickness d, the amplitude of vibration of light of wavelength λ decreases in the ratio $1 : e^{-2\pi a \frac{d}{\lambda}}$ where a is the absorption index.
39	**absorption spectrum**	spe	The spectrum resulting when the source is continuous radiation passed through an absorbing medium, commonly dark at some of those wavelengths for which the emission spectrum of the medium would be bright.
40	**acceleration**	mec	The time rate of change of velocity.
41	**acceleration of gravity**	mec	The ratio of the weight of a material particle to its mass at any specific point in an approximately uniform gravitational field.
42	**accidental error**	gen	In repeated observations of a quantity which is in principle constant, it is in general found that slightly different values are obtained.

Français *French*	**Español** *Spanish*	**Italiano** *Italian*	**Nederlands** *Dutch*	**Deutsch** *German*	**No.**
coefficient *m* d'absorption de Bunsen	coeficiente *m* de absorción de Bunsen	coefficiente *m* di assorbimento di Bunsen	absorptie-coëfficiënt *m* van Bunsen	Bunsenscher Absorptions-koeffizient *m*	34
courbe *f* d'absorption	curva *f* de absorción	curva *f* di assorbimento	absorptie-kromme *f*	Absorptions-kurve *f*	35
discontinuité *f* d'absorption	discontinuidad *f* de absorción	discontinuità *f* di assorbimento	absorptiedis-continuïteit *f*, absorptie-sprong *m*	Absorptions-sprung *m*	36
limite *f* d'absorption	límite *m* de absorción	limite *m* di assorbimento	absorptiekant *m*, absorptierand *m*	Absorptions-kante *f*	37
indice *m* d'absorption	índice *m* de absorción	indice *m* di assorbimento	absorptie-index *m*	Absorptions-index *m*	38
spectre *m* d'absorption	espectro *m* de absorción	spettro *m* di assorbimento	absorptie-spectrum *n*	Absorptions-spektrum *n*	39
accélération *f*	aceleración *f*	accelerazione *f*	acceleratie *f*, versnelling *f*	Beschleunigung *f*	40
accélération *f* de la pesanteur	aceleración *f* de la gravedad	accelerazione *f* della gravità	versnelling *f* van de zwaartekracht	Erdbeschleu-nigung *f*, Fallbeschleu-nigung *f*, Schwere-beschleuni-gung *f*	41
erreur *f* accidentelle	error *m* accidental	errore *m* occasionale	toevallige fout *f*	zufälliger Fehler *m*	42

No.	English *GB and US*	Subject	Definition
43	**accommodation coefficient**	mec	A quantity defined by the equation: $a = \frac{T_3 - T_1}{T_2 - T_1}$ where T_1 is the temperature of gas molecules striking a surface which is at temperature T_2 and T_3 is the temperature of the gas molecules as they leave the surface, a is the accommodation coefficient.
44	**accumulation coefficient**	phc	A term sometimes used specifically to denote the rate of increase in the concentration of adsorbed molecules upon a surface, in relation to the concentration of that molecular species in the phase in contact with the surface.
45	**accumulation point**	mec	One of a set such that any neighborhood of this point, no matter how small, contains a member of the set.
46	**achromat, achromatic lens**	opt	A compound lens corrected so as to have the same focal length for two or more different wavelengths.
47	**achromatic**	opt	a) Free from hue. b) Transmitting light without showing its constituent colors, or separating it into them.
48	**achromatic combination**	opt	If reversed crown and flint prisms are made of such angle that the angles of dispersion between any two different wavelengths of light are alike but reversed in direction, then these two colors will not be separated and all colors lying between them will be separated little if any from each other.
49	**achromatic locus**	opt	Chromaticities which may be acceptable reference standards under circumstances of common occurence are represented in a chromaticity diagram by points in a region which may be called the achromatic locus.
50	**achromatic point**	opt	The point on a chromaticity diagram that represents an achromatic stimulus.
51	**achromatic stimulus**	opt	a) A visual stimulus that is capable of exciting a color sensation of no hue. b) In practice, an arbitrarily-chosen chromaticity, such as that of the prevailing illumination.

Français *French*	**Español** *Spanish*	**Italiano** *Italian*	**Nederlands** *Dutch*	**Deutsch** *German*	**No.**
coefficient *m* d'accommodation	coeficiente *m* de acomodación	coefficiente *m* di accomodamento	accommodatiecoëfficiënt *m*	Akkommodationskoeffizient *m*	43
coefficient *m* d'accumulation	coeficiente *m* de acumulación	coefficiente *m* di accumulazione	aggregatiecoëfficiënt *m*	Aggregationskoeffizient *m*	44
point *m* d'accumulation	punto *m* de acumulación	punto *m* di accumulazione	accumulatiepunt *n*, verzamelpunt *n*	Häufungsstelle *f*	45
objectif *m* achromatique	lente *f* acromática, objetivo *m* acromático	obiettivo *m* acromatico	achromatische lens *f*	Achromat *m*	46
achromatique *adj*	acromático *adj*	acromatico *adj*	achromatisch *adj*	achromatisch *adj*, unbunt *adj*	47
combinaison *f* achromatique	combinación *f* acromática	combinazione *f* acromatica	achromatische combinatie *f*	achromatische Kombination *f*	48
lieu *m* des couleurs sans tonalités achromatiques	lugar *m* acromático	luogo *m* acromatico	achromatisch gebied *n*	achromatisches Gebiet *n*, Unbunt-Gebiet *n*	49
point *m* achromatique	punto *m* acromático	punto *m* acromatico	achromatisch punt *n*	achromatischer Punkt *m*	50
excitation *f* achromatique	estímulo *m* acromático	stimolo *m* acromatico	achromatische stimulans *m*	achromatischer Reiz *m*	51