right click to open a new tab for *certain words* in red to learn something new!

Unit name	Unit symbol	Quantity name	Definition	Dimension symbol
metre	m	length	• **Original** (1793): 1/10000000 of the meridian through Paris between the North Pole and the Equator.[FG] • **Interim** (1960): 1650763.73 wavelengths in a vacuum of the radiation corresponding to the transition between the $2p^{10}$ and $5d^{5}$ quantum levels of the krypton-86 atom. • **Current** (1983): The distance travelled by light in vacuum in 1/299792458 second.	L
kilogram[n 2]	kg	mass	• **Original** (1793): The **grave** was defined as being the weight [mass] of one cubic decimetre of pure water at its freezing point.[FG] • **Current** (1889): The mass of the international prototype kilogram.	M
second	s	time	• **Original** (Medieval): 1/86400 of a day. • **Interim** (1956): 1/31556925.9747 of the tropical year for 1900 January 0 at 12 hours ephemeris time. • **Current** (1967): The duration of 9192631770 periods of the radiation corresponding to the transition between the two hyperfine levels of the ground state of the caesium 133 atom.	T

ampere	A	electric current	• **Original** (1881): A tenth of the electromagnetic CGS unit of current. The [CGS] electromagnetic unit of current is that current, flowing in an arc 1 cm long of a circle 1 cm in radius creates a field of one oersted at the centre.[39] IEC • **Current** (1946): The constant current which, if maintained in two straight parallel conductors of infinite length, of negligible circular cross-section, and placed 1 m apart in vacuum, would produce between these conductors a force equal to 2×10^{-7} newtons per metre of length.	I
kelvin	K	thermodynamic temperature	• **Original** (1743): The **centigrade scale** is obtained by assigning 0 °C to the freezing point of water and 100 °C to the boiling point of water. • **Interim** (1954): The triple point of water (0.01 °C) defined to be exactly 273.16 K.[n 3] • **Current** (1967): 1/273.16 of the thermodynamic temperature of the triple point of water	Θ
mole	mol	amount of substance	• **Original** (1900): The molecular weight of a substance in mass grams.[ICAW] • **Current** (1967): The amount of substance of a system which contains as many elementary entities as there are atoms in 0.012 kilogram of carbon 12.[n 4]	N
candela	cd	luminous intensity	• **Original** (1946): The value of the new candle is such that the brightness of the full radiator at the temperature of solidification of platinum is 60 new candles per square centimetre.	J

			• **Current** (1979): The luminous intensity, in a given direction, of a source that emits monochromatic radiation of frequency 5.4×10^{14} hertz and that has a radiant intensity in that direction of 1/683 watt per steradian.	

Derived units

Name	Symbol	Quantity	Equivalents	SI base unit Equivalents
hertz	**Hz**	frequency	1/s	s^{-1}
radian	**rad**	angle	m/m	dimensionless
steradian	**sr**	solid angle	m^2/m^2	dimensionless
newton	**N**	force, weight	$kg \cdot m/s^2$	$kg \cdot m \cdot s^{-2}$
pascal	**Pa**	pressure, stress	N/m^2	$kg \cdot m^{-1} \cdot s^{-2}$
joule	**J**	energy, work, heat	$N \cdot m$ $C \cdot V$ $W \cdot s$	$kg \cdot m^2 \cdot s^{-2}$
watt	**W**	power, radiant flux	J/s $V \cdot A$	$kg \cdot m^2 \cdot s^{-3}$

coulomb	**C**	electric charge or quantity of electricity	$s \cdot A$	$s \cdot A$
volt	**V**	voltage, electrical potential difference, electromotive force	W/A J/C	$kg \cdot m^2 \cdot s^{-3} \cdot A^{-1}$
farad	**F**	electrical capacitance	C/V s/Ω	$kg^{-1} \cdot m^{-2} \cdot s^4 \cdot A^2$
ohm	**Ω**	electrical resistance, impedance, reactance	V/A	$kg \cdot m^2 \cdot s^{-3} \cdot A^{-2}$
siemens	**S**	electrical conductance	$1/\Omega$ A/V	$kg^{-1} \cdot m^{-2} \cdot s^3 \cdot A^2$
weber	**Wb**	magnetic flux	J/A $T \cdot m^2$	$kg \cdot m^2 \cdot s^{-2} \cdot A^{-1}$
tesla	**T**	magnetic field strength, magnetic flux density	$V \cdot s/m^2$ Wb/m^2 $N/(A \cdot m)$	$kg \cdot s^{-2} \cdot A^{-1}$
henry	**H**	inductance	$V \cdot s/A$ $\Omega \cdot s$ Wb/A	$kg \cdot m^2 \cdot s^{-2} \cdot A^{-2}$

degree Celsius	**°C**	temperature relative to 273.15 K	K	K
lumen	**lm**	luminous flux	cd · sr	cd
lux	**lx**	illuminance	lm/m^2	m^{-2} · cd
becquerel	**Bq**	radioactivity (decays per unit time)	1/s	s^{-1}
gray	**Gy**	absorbed dose (of ionizing radiation)	J/kg	$m^2 \cdot s^{-2}$
sievert	**Sv**	equivalent dose (of ionizing radiation)	J/kg	$m^2 \cdot s^{-2}$
katal	**kat**	catalytic activity	mol/s	s^{-1} · mol

Name	Symbol	Quantity	Expression in terms of SI base units
square metre	**m^2**	area	m^2
cubic metre	**m^3**	volume	m^3
metre per second	**m/s**	speed, velocity	$m \cdot s^{-1}$
cubic metre per second	**m^3/s**	volumetric flow	$m^3 \cdot s^{-1}$

metre per second squared	**m/s^2**	acceleration	$m \cdot s^{-2}$
metre per second cubed	**m/s^3**	jerk, jolt	$m \cdot s^{-3}$
metre per quartic second	**m/s^4**	snap, jounce	$m \cdot s^{-4}$
radian per second	**rad/s**	angular velocity	s^{-1}
radian per second squared	**rad/s^2**	angular acceleration	s^{-2}
newton second	**$N \cdot s$**	momentum, impulse	$m \cdot kg \cdot s^{-1}$
newton metre second	**$N \cdot m \cdot s$**	angular momentum	$m^2 \cdot kg \cdot s^{-1}$
newton metre	**$N \cdot m = J/rad$**	torque, moment of force	$m^2 \cdot kg \cdot s^{-2}$
newton per second	**N/s**	yank	$m \cdot kg \cdot s^{-3}$
reciprocal metre	**m^{-1}**	wavenumber, optical power, curvature, spatial frequency	m^{-1}
kilogram per square metre	**kg/m^2**	area density	$m^{-2} \cdot kg$
kilogram per cubic metre	**kg/m^3**	density, mass density	$m^{-3} \cdot kg$

cubic metre per kilogram	**m^3/kg**	specific volume	$m^3 \cdot kg^{-1}$
mole per cubic metre	**mol/m^3**	molarity, amount of substance concentration	$m^{-3} \cdot mol$
cubic metre per mole	**m^3/mol**	molar volume	$m^3 \cdot mol^{-1}$
joule second	**$J \cdot s$**	action	$m^2 \cdot kg \cdot s^{-1}$
joule per kelvin	**J/K**	heat capacity, entropy	$m^2 \cdot kg \cdot s^{-2} \cdot K^{-1}$
joule per kelvin mole	**$J/(K \cdot mol)$**	molar heat capacity, molar entropy	$m^2 \cdot kg \cdot s^{-2} \cdot K^{-1} \cdot mol^{-1}$
joule per kilogram kelvin	**$J/(K \cdot kg)$**	specific heat capacity, specific entropy	$m^2 \cdot s^{-2} \cdot K^{-1}$
joule per mole	**J/mol**	molar energy	$m^2 \cdot kg \cdot s^{-2} \cdot mol^{-1}$
joule per kilogram	**J/kg**	specific energy	$m^2 \cdot s^{-2}$
joule per cubic metre	**J/m^3**	energy density	$m^{-1} \cdot kg \cdot s^{-2}$
newton per metre	**$N/m = J/m^2$**	surface tension, stiffness	$kg \cdot s^{-2}$
watt per square metre	**W/m^2**	heat flux density, irradiance	$kg \cdot s^{-3}$

watt per metre kelvin	**W/(m·K)**	thermal conductivity	$m \cdot kg \cdot s^{-3} \cdot K^{-1}$
square metre per second	**m^2/s**	kinematic viscosity, thermal diffusivity, diffusion coefficient	$m^2 \cdot s^{-1}$
pascal second	**$Pa \cdot s = N \cdot s/m^2$**	dynamic viscosity	$m^{-1} \cdot kg \cdot s^{-1}$
coulomb per square metre	**C/m^2**	electric displacement field, polarization density	$m^{-2} \cdot s \cdot A$
coulomb per cubic metre	**C/m^3**	electric charge density	$m^{-3} \cdot s \cdot A$
ampere per square metre	**A/m^2**	electric current density	$A \cdot m^{-2}$
siemens per metre	**S/m**	electrical conductivity	$m^{-3} \cdot kg^{-1} \cdot s^3 \cdot A^2$
siemens square metre per mole	**$S \cdot m^2/mol$**	molar conductivity	$kg^{-1} \cdot s^3 \cdot mol^{-1} \cdot A^2$
farad per metre	**F/m**	permittivity	$m^{-3} \cdot kg^{-1} \cdot s^4 \cdot A^2$
henry per metre	**H/m**	magnetic permeability	$m \cdot kg \cdot s^{-2} \cdot A^{-2}$
volt per metre	**V/m**	electric field strength	$m \cdot kg \cdot s^{-3} \cdot A^{-1}$
ampere per metre	**A/m**	magnetization, magnetic field strength	$A \cdot m^{-1}$

candela per square metre	**cd/m^2**	luminance	$cd \cdot m^{-2}$
lumen second	**$lm \cdot s$**	luminous energy	$cd \cdot sr \cdot s$
lux second	**$lx \cdot s$**	luminous exposure	$cd \cdot sr \cdot s \cdot m^{-2}$
coulomb per kilogram	**C/kg**	exposure (X and gamma rays)	$kg^{-1} \cdot s \cdot A$
gray per second	**Gy/s**	absorbed dose rate	$m^2 \cdot s^{-3}$
ohm metre	**$\Omega \cdot m$**	resistivity	$m^3 \cdot kg \cdot s^{-3} \cdot A^{-2}$
kilogram per metre	**kg/m**	linear mass density	$m^{-1} \cdot kg$
coulomb per metre	**C/m**	linear charge density	$m^{-1} \cdot s \cdot A$
mole per kilogram	**mol/kg**	molality	$kg^{-1} \cdot mol$
kilogram per mole	**kg/mol**	molar mass	$kg \cdot mol^{-1}$
metre per cubic metre	**m/m^3**	fuel efficiency	m^{-2}
kilogram per second	**kg/s**	mass flow rate	$kg \cdot s^{-1}$
joule per tesla	**J/T**	magnetic dipole moment	$m^2 \cdot A$
watt per cubic metre	**W/m^3**	spectral irradiance, power density	$m^{-1} \cdot kg \cdot s^{-3}$

kelvin per watt	**K/W**	thermal resistance	$m^{-2} \cdot kg^{-1} \cdot s^{3} \cdot K$
reciprocal kelvin	**K^{-1}**	thermal expansion coefficient	K^{-1}
kelvin per metre	**K/m**	temperature gradient	$m^{-1} \cdot K$
square metre per volt second	**$m^2/(V \cdot s)$**	electron mobility	$kg^{-1} \cdot s^{2} \cdot A$
joule per square metre second	**$J/(m^2 \cdot s)$**	energy flux density	$kg \cdot s^{-3}$
reciprocal pascal	**Pa^{-1}**	compressibility	$m \cdot kg^{-1} \cdot s^{2}$
reciprocal henry	**H^{-1}**	magnetic reluctance	$m^{-2} \cdot kg^{-1} s^{2} \cdot A^{2}$
weber per metre	**Wb/m**	magnetic vector potential	$m \cdot kg \cdot s^{-2} \cdot A^{-1}$
weber metre	**$Wb \cdot m$**	magnetic moment	$m^{3} \cdot kg \cdot s^{-2} \cdot A^{-1}$
tesla metre	**$T \cdot m$**	magnetic rigidity	$m \cdot kg \cdot s^{-2} \cdot A^{-1}$
joule per square metre	**J/m^2**	radiant exposure	$kg \cdot s^{-2}$
cubic metre per mole second	**$m^3/(mol \cdot s)$**	catalytic efficiency	$m^{3} \cdot s^{-1} \cdot mol^{-1}$
kilogram square metre	**$kg \cdot m^2$**	moment of inertia	$m^{2} \cdot kg$

newton metre second per kilogram	**N · m · s/kg**	specific angular momentum	$m^2 \cdot s^{-1}$
hertz per second	**Hz/s**	frequency drift	s^{-2}
lumen per watt	**lm/W**	luminous efficacy	$m^{-2} \cdot kg^{-1} \cdot s^3 \cdot lm$
ampere radian	**A · rad**	magnetomotive force	A
metre per henry	**m/H**	magnetic susceptibility	$m^{-1} \cdot kg^{-1} \cdot s^2 \cdot A^2$
watt per steradian	**W/sr**	radiant intensity	$m^2 \cdot kg \cdot s^{-3}$
watt per steradian metre	**W/(sr · m)**	spectral intensity	$m \cdot kg \cdot s^{-3}$
watt per steradian square metre	**W/(sr · m²)**	radiance	$kg \cdot s^{-3}$
watt per steradian cubic metre	**W/(sr · m³)**	spectral radiance	$m^{-1} \cdot kg \cdot s^{-3}$
watt per metre	**W/m**	spectral power	$m \cdot kg \cdot s^{-3}$