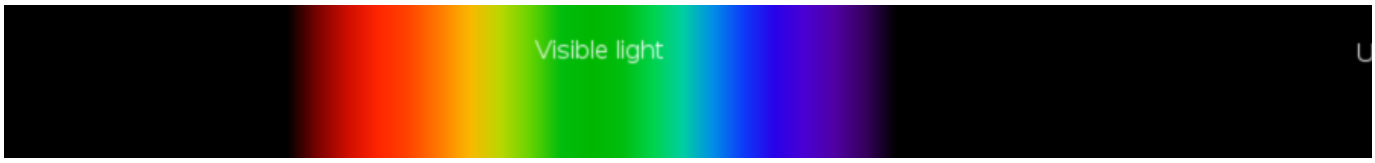
Calculator for the Electromagnetic Spectrum

Convert wave length, frequency and energy



Round to 2 decimal places Reset

Wave length λ:	580	* 10^-9 m, Nanometers	=
Frequency f:	516.88	* 10^12 Hz, Terahertz	=
Photon energy E_p:	2.14	* eV, Elektron-volts	=
Energy E:	342.49	* 10^-21 J, Zeptojoule	=
Temperature at λ_{max}:	4996.15 Kelvin		
Photons per joule:	2.92*10^18		
Type:	Visible light		
	Yellow		

Formulas:

Planck constant h = $6.62606957*10^{-34}$ J*s
Speed of light c = 299792458 m/s
$c = \lambda * f$
Elektron-volt: 1 eV = $1.602176565*10^{-19}$ J
$E = h*c / \lambda$
$E_p = E / (1.602176565*10^{-19})$
T at λ_{max} = 2,89776829 nm * Kelvin / λ (Wien's displacement law)
T at λ_{max} is the temperature of a black body, whose radiation has a maximum at λ.
Photons per joule = $1 / (1.602176565*10^{-19} * E_p)$

Table:

Type	Subtype	λ	f	E_p	E
Low frequency	ELF, extremely low frequency	> 10 Mm	< 30 Hz	< 124 feV	$< 1.99*10^{-32}$ J
	SLF, super low frequency	10 Mm - 1 Mm	30 Hz - 300 Hz	124 feV - 1.24 peV	$1.99*10^{-32}$ J - $1.99*10^{-31}$ J
	ULF, ultra low frequency	1 Mm - 100 km	300 Hz - 3 kHz	1.24 peV - 12.4 peV	$1.99*10^{-31}$ J - $1.99*10^{-30}$ J
	VLF, very low frequency	100 km - 10 km	3 kHz - 30 kHz	12.4 peV - 124 peV	$1.99*10^{-30}$ J - $1.99*10^{-29}$ J
Radio waves	LF, low frequency	10 km - 650 m	30 kHz - 461 kHz	124 peV - 1.91 neV	$1.99*10^{-29}$ J - $3.06*10^{-28}$ J
	MF, mid frequency	650 m - 180 m	461 kHz - 1.67 MHz	1.91 neV - 6.89 neV	$3.06*10^{-28}$ J - $1.1*10^{-27}$ J
	HF, high frequency	180 m - 10 m	1.67 MHz - 30 MHz	6.89 neV - 124 neV	$1.1*10^{-27}$ J - $1.99*10^{-26}$ J
	VHF, very high frequency	10 m - 1 m	30 MHz - 300 MHz	124 neV - 1.24 µeV	$1.99*10^{-26}$ J - $1.99*10^{-25}$ J
Microwaves	UHF, ultra high frequency decimeter band	1 m - 10 cm	300 MHz - 3 GHz	1.24 µeV - 12.4 µeV	$1.99*10^{-25}$ J - 2 yJ
	SHF, super high frequency centimeter band	10 cm - 1 cm	3 GHz - 30 GHz	12.4 µeV - 124 µeV	1.99 yJ - 19.9 yJ

	EHF, extremely high frequency millimeter band	1 cm - 1 mm	30 GHz - 300 GHz	124 µeV - 1.24 meV	19.9 yJ - 199 yJ
Terahertz radiation	Submillimeter radiation	1 mm - 100 µm	300 GHz - 3 THz	1.24 meV - 12.4 meV	199 yJ - 1.99 zJ
Infrared radiation	Far infrared	100 µm - 50 µm	3 THz - 6 THz	12.4 meV - 24.8 meV	1.99 zJ - 3.97 zJ
	Mid infrared	50 µm - 3 µm	6 THz - 100 THz	24.8 meV - 413 meV	3.97 zJ - 66.2 zJ
	Near infrared	3 µm - 780 nm	100 THz - 384 THz	413 meV - 1.59 eV	66.2 zJ - 255 zJ
Visible light	Red	780 nm - 640 nm	384 THz - 468 THz	1.59 eV - 1.94 eV	255 zJ - 310 zJ
	Orange	640 nm - 600 nm	468 THz - 500 THz	1.94 eV - 2.07 eV	310 zJ - 331 zJ
	Yellow	600 nm - 570 nm	500 THz - 526 THz	2.07 eV - 2.18	331 zJ - 349 zJ
	Green	570 nm - 490 nm	526 THz - 612 THz	2.18 eV - 2.53 eV	349 zJ - 405 zJ
	Blue	490 nm - 430 nm	612 THz - 697 THz	2.53 eV - 2.88 eV	405 zJ - 462 zJ
	Violet	430 nm - 380 nm	697 THz - 789 THz	2.88 eV - 3.26 eV	462 zJ - 523 zJ
Ultraviolet	Near UV, UVA	380 nm - 315 nm	789 THz - 952 THz	3.26 eV - 3.94 eV	523 zJ - 631 zJ
	Near UV, UVB	315 nm - 280 nm	952 THz - 1.07 PHz	3.94 eV - 4.43 eV	631 zJ - 709 zJ
	Near UV	280 nm - 200 nm	1.07 PHz - 1.5 PHz	4.43 eV - 6.2 eV	709 zJ - 993 zJ
	Far UV	200 nm - 50 nm	1.5 PHz - 6 PHz	6.2 eV - 24.8 eV	993 zJ - 3.97 aJ
	XUV, extreme UV	50 nm - 1 nm	6 PHz - 300 PHz	24.8 eV - 1.24 keV	3.97 aJ - 199 aJ
X-radiation	Soft X-rays, SX	1 nm - 100 pm	300 PHz - 3 EHz	1.24 keV - 12.4 keV	199 aJ - 1.99 fJ
	Hard X-rays, HX	100 pm - 10 pm	3 EHz - 30 EHz	12.4 keV - 124 keV	1.99 fJ - 19.9 fJ
Gamma radiation	γ	< 10 pm	> 30 EHz	> 124 keV	> 19.9 fJ
	Cosmic γ-rays	< 4 pm	> 75 EHz	> 310 kEv	> 49.7 fJ