Unitate de măsură (Prefixe SI)

Nume	yotta	zetta	exa	peta	tera	giga	mega	kilo	hecto	deca
Simbol	Y	Z	E	P	T	G	M	k	h	da
Factor	10^{24}	10^{21}	10^{18}	10^{15}	10^{12}	10^{9}	10^{6}	10^{3}	10^{2}	10^{1}
Nume	deci	centi	mili	micro	nano	pico	femto	atto	zepto	yokto
Simbol	d	c	m	µ	n	p	f	a	z	y
Factor	10^{-1}	10^{-2}	10^{-3}	10^{-6}	10^{-9}	10^{-12}	10^{-15}	10^{-18}	10^{-21}	10^{-24}

Marimea			Unitatea de masura		
Denumirea	Simbol	Relatia de definitie	Denumire	Simbol	Relatia cu alte unitati
Intensitatea luminoasa	I	marime fundamentala	candela	Cd	unitate fundamentala
Flux luminos	Φ	Φ = I*R	luxmen	lm	1lm=1Cd×sr
Iluminare	E	E = Φ / S	lux	lx	1lx=1lm/m^2
Luminanta (stralucire)	L	L= I / S	candela pe metru patrat	Cd/m^2	
Radianta (emitanta)	R	R = Φ / S	lux	lx	
Cantitate de lumina	Q	Q =Φ*t	lumensecunda	lm×s	
Cantitate de iluminare (expunere luminoasa)	Q_E	Q_E = E*t	luxsecunda	lx×s	
Eficacitate luminoasa	η	η = Φ / P	lumen / watt	lm/W	
Intensitatea curentului electric (curentul electric)	i,I	marime fundamentala	amper	A	unitate fundamentala
Sarcina electrica (cantitatea de	q,Q	q = ∫ i*dt	coulomb	C	1C=1A×s

electricitate)					
Densitatea de volum a sarcinii electrice(sarcina volumetrica)	ρ_v		coulomb / metru cub	C/m^3	
Densitatea de suprafata a sarcinii electrice (sarcina superficiala)	ρ_s		coulomb / metru patrat	C/m^2	
Intensitatea campului electric	E	E = F / q = U_{12} / d	newton/coulomb volt / metru	N / C V/m	1V/m=1N/C
Tensiunea electrica Tensiunea electromotoare Potential electric	u,U u_e ,U_e V	U = L / q	volt	V	1V=1J/C
Inductie electrica (deplasare electrica)	D	D = ε * E	coulomb / metru patrat	C / m^2	
Flux electric (= sarcina electrica)	Ψ		coulomb	C	
Capacitate electrica	C	C = Q / U	farad	F	1F=1C/V
Permitivitate	ε		farad / metru	F / m	
Moment electric dipolar	p	p = l*q	metru-coulomb	m*C	
Polarizare electrica	P		coulomb / metru patrat	C / m^2	
Densitate de curent electric	J	J=I/S	amper / metru patrat	A / m^2	
Rezistenta electrica Impedanta Reactanta	R Z X	R = U / I $Z=\sqrt{R^2+X^2}$=R/cosφ X=Usinφ/I	ohm	Ω	1Ω=1V/A
Rezistivitate	ρ	ρ = R*S / l	ohmetru	Ω m	
Conductanta Admitanta Susceptanta	G Y B	G = 1 / R= I / U $Y = 1/Z=I/U=S/U^2$ $B = X/Z^2$=Isinφ/U	*siemens*	$A * V^{-1}$ *S*	*1S=1Ω*$^{-1}$
Conductivitate	σ	σ = 1 / ρ	siemens / metru	S / m	‘
Intensitatea campului magnetic	H		amper / metru	A/m	

			(amperspira/metru)		
Tensiune magnetica / Forta magneto motoare (Tensiune magnetica) Tensiune magnetomotoare Potential magnetic	F_{mm} U_{mm} V_m		amper (amperspira)	A	
Inductie magnetica	B	B = F / l *L	tesla	T	1T= N / A*m
Flux magnetic	Φ		weber	Wb	1Wb = T * m^2
Potential magnetic vector			weber / metru	Wb/m	
Inductivitate	L	L = N*Φ / I	henry	H	H = Wb / A
Permeabilitate magnetica	μ	μ = B / H	henry / metru sau newton / amper patrat sau weber/amper metru	H/m sau N/A^2 sau W/Am	
Moment magnetic	m	m = S * i (unde S e aria)	amper * metru patrat sau joule / tesla	$A \times m^2$ J / T	
Magnetizare	M'		amper / metru	A / m	
Polarizatie magnetica	M	$M = \mu_o * M'$	tesla	T	
Reluctanta magnetica	R_m	$R_m = U_m / \Phi$	amper / weber	A / Wb	A / Wb = H^{-1}
Permeanta	Λ	$\Lambda = 1 / R_m$	henry	H	
Densitate de energie electromagnetica	w		joule / metru cub	J / m^3	
Densitatea fluxului de energie electromagnetica (vectorul lui Poynting)			watt / metru patrat	W / m^2	
Putere instantanee	P	P =u*i	watt	W	1W=1A×V

Putere activa		P = U*I*cosφ			
Putere reactiva	Q	Q = U*I*sinφ	voltamper reactiv	var	
Putere aparenta	S	S = U*I	voltamper	VA	

Clase de izolatie

Conform STAS 6247-60, materialele electroizolante utilizate in constructia masinilor si aparatelor electrice, dupa temperatura care le caracterizeaza stabilitatea termica, se clasifica in urmatoarele clase de izolatie:

Clasa de izolatie **Y - 90°C** : izolatii din bumbac, matase sau hartie neimpregnata sau neintroduse in lichide electroizolante si alte materiale dovedite experimental ca pot functiona la 90°C.

Clasa de izolatie **A - 105°C** : izolatii din bumbac, matase sau hartie impregnata sau introduse in lichide electroizolante si alte materiale dovedite experimental ca pot functiona la 105°C.

Clasa de izolatie **E - 120°C** : unele pelicule organice sintetice si alte materiale dovedite experimental ca pot functiona la 120°C.

Clasele de izolatie **B - 130°C** si **F - 155°C** : materiale pe baza de mica, azbest, fibre de sticla cu lianti si compunduri de impregnare corespunzatoare si alte materiale dovedite experimental ca pot functiona la 130°C, respectiv la 155°C.

Clasa de izolatie **H - 180°C** : materiale pe baza de mica, azbest, fibre de sticla cu lianti si compunduri silico-organice si alte materiale dovedite experimental ca pot functiona la 180°C.

Clasa de izolatie **C - peste 180°C** : materiale pe baza de mica, portelan, cuart, sticla cu sau fara lianti organici si alte materiale dovedite experimental ca pot functiona la peste 180°C (temperatura de utilizare este limitata numai de caracteristicile fizico-chimice si electrice ale acestor materiale).

Valorile functiilor trigonometrice ale catorva unghiuri

Cadranul	Unghiul	sin	cos	tg	ctg
I	0°	0	1	0	$+\infty$
	$15^o = \frac{\pi}{12}$	$\frac{1}{4}(\sqrt{6}-\sqrt{2})$	$\frac{1}{4}(\sqrt{6}+\sqrt{2})$	$2-\sqrt{3}$	$2+\sqrt{3}$
	$18^o = \frac{\pi}{10}$	$\frac{1}{4}(\sqrt{5}-1)$	$\frac{1}{4}\sqrt{10+2\sqrt{5}}$	$\sqrt{1-\frac{2}{5}\sqrt{5}}$	$\sqrt{5+2\sqrt{5}}$

	$30^o = \frac{\pi}{6}$	$\frac{1}{2}$	$\frac{1}{2}\sqrt{3}$	$\frac{1}{3}\sqrt{3}$	$\sqrt{3}$
	$45^o = \frac{\pi}{4}$	$\frac{1}{2}\sqrt{2}$	$\frac{1}{2}\sqrt{2}$	1	1
	$60^o = \frac{\pi}{3}$	$\frac{1}{2}\sqrt{3}$	$\frac{1}{2}$	$\sqrt{3}$	$\frac{1}{3}\sqrt{3}$
	$72^o = \frac{2\pi}{5}$	$\frac{1}{4}\sqrt{10+2\sqrt{5}}$	$\frac{1}{4}(\sqrt{5}-1)$	$\sqrt{5+2\sqrt{5}}$	$\sqrt{1-\frac{2}{5}\sqrt{5}}$
	$75^o = \frac{5\pi}{12}$	$\frac{1}{4}(\sqrt{6}+\sqrt{2})$	$\frac{1}{4}(\sqrt{6}-\sqrt{2})$	$2+\sqrt{3}$	$2-\sqrt{3}$
	$90^o = \frac{\pi}{2}$	1	0	$\pm\infty$	0
	$108^o = \frac{3\pi}{5}$	$\frac{1}{4}\sqrt{10+2\sqrt{5}}$	$-\frac{1}{4}(\sqrt{5}-1)$	$-\sqrt{5+2\sqrt{5}}$	$-\sqrt{1-\frac{2}{5}\sqrt{5}}$
	$120^o = \frac{2\pi}{3}$	$\frac{1}{2}\sqrt{3}$	$-\frac{1}{2}$	$-\sqrt{3}$	$-\frac{1}{3}\sqrt{3}$
II	$135^o = \frac{3\pi}{4}$	$\frac{1}{2}\sqrt{2}$	$-\frac{1}{2}\sqrt{2}$	-1	-1
	$150^o = \frac{5\pi}{6}$	$\frac{1}{2}$	$-\frac{1}{2}\sqrt{3}$	$-\frac{1}{3}\sqrt{3}$	$-\sqrt{3}$
	$162^o = \frac{3\pi}{10}$	$\frac{1}{4}(\sqrt{5}-1)$	$-\frac{1}{4}\sqrt{10+2\sqrt{5}}$	$-\sqrt{1-\frac{2}{5}\sqrt{5}}$	$-\sqrt{5+2\sqrt{5}}$
	$180^o = \pi$	0	-1	0	$\pm\infty$
	$210^o = \frac{7\pi}{6}$	$-\frac{1}{2}$	$-\frac{1}{2}\sqrt{3}$	$\frac{1}{3}\sqrt{3}$	$\sqrt{3}$
	$225^o = \frac{5\pi}{4}$	$-\frac{1}{2}\sqrt{2}$	$-\frac{1}{2}\sqrt{2}$	1	1
III	$240^o = \frac{4\pi}{3}$	$-\frac{1}{2}\sqrt{3}$	$-\frac{1}{2}$	$\sqrt{3}$	$\frac{1}{3}\sqrt{3}$
	$270^o = \frac{3\pi}{2}$	-1	0	$\pm\infty$	0
	$300^o = \frac{5\pi}{3}$	$-\frac{1}{2}\sqrt{3}$	$\frac{1}{2}$	$-\sqrt{3}$	$-\frac{1}{3}\sqrt{3}$
IV	$315^o = \frac{7\pi}{4}$	$-\frac{1}{2}\sqrt{2}$	$\frac{1}{2}\sqrt{2}$	-1	-1
	$330^o = \frac{11\pi}{6}$	$-\frac{1}{2}$	$\frac{1}{2}\sqrt{3}$	$-\frac{1}{3}\sqrt{3}$	$-\sqrt{3}$
	$360^o = 2\pi$	0	1	0	$\pm\infty$