1.3.6 Obsolete units

Photometry has a long history that has generated a number of different units of measurement for illuminance and luminance. Table 1.2 lists some of these obsolete units, together with the multiplying factors necessary to convert from the alternative unit to the SI units of lumens/m^2 for illuminance and candela/m^2 for luminance.

Table 1.2 Some photometric units of measurement for illuminance and luminance and the multiplying factors necessary to change them to System Internationale (SI) units

Quantity	Unit	Dimensions	Multiplying factor
Illuminance	lux	lumen/m^2	1.00
	metre candle	lumen/m^2	1.00
	phot	lumen/cm^2	10,000
	footcandle	lumen/ft^2	10.76
Luminance	nit	candela/m^2	1.00
	stilb	candela/cm^2	10,000
		candela/in^2	1,550
		candela/ft^2	10.76
Luminous exitance★	apostilb★	lumen/m^2	0.32
	blondel★	lumen/m^2	0.32
	lambert★	lumen/cm^2	3,183
	footlambert★	lumen/ft^2	3.43

★ *Luminous exitance is the product of the illuminance on the surface and the reflectance of the surface. It is only meaningful for completely diffusely reflecting surfaces. Luminous exitance has the dimensions of lumens/unit area. Luminous exitance is deprecated in the SI system.*

1.3.7 Typical values

Table 1.3 shows some illuminances and luminances typical of commonly occurring situations, all measured using the CIE Standard Photopic Observer.

Table 1.3 Typical illuminance and luminance values.

Situation	Illuminance (lm/m^2)	Typical surface	Luminance (cd/m^2)
Clear sky in summer in temperate zones	100,000	Grass	1,910
Overcast sky in summer in temperate zones	16,000	Grass	300
Textile inspection	1,500	Light grey cloth	140
Office work	500	White paper	120
Heavy engineering	300	Steel	20
Good road lighting	20	Concrete road surface	2.0
Moonlight	0.5	Asphalt road surface	0.01