Light Conversion Chart

Lux, foot-candles, nits and foot-lamberts, with recommended light levels

For: Lighting designers, photographers, facility managers and display engineers

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EXACT DEFINITION	FORMULA	REVERSE	WORKED EXAMPLE
1 fc = 1 lm/ft² = 10.763 910 4 lx; 1 fL = 3.426 259 cd/m² (exact)	lx = fc × 10.7639	fc = lx ÷ 10.7639	500 lx (office desk) = 46.45 fc

Values are rounded to 2 decimal places. Recommended levels are maintained illuminance on the task area.

Lux to foot-candles

Lux (lx)	Foot-candles (fc)	Lux (lx)	Foot-candles (fc)
1	0.09	**500**	46.45
5	0.46	**750**	69.68
10	0.93	**1,000**	92.90
20	1.86	**1,500**	139.35
50	4.65	**2,000**	185.81
75	6.97	**5,000**	464.52
100	9.29	**10,000**	929.03
150	13.94	**20,000**	1,858.06
200	18.58	**50,000**	4,645.15
300	27.87	**100,000**	9,290.30

Display brightness: nits to foot-lamberts

Nits (cd/m²)	Foot-lamberts (fL)	Nits (cd/m²)	Foot-lamberts (fL)
50	14.59	**600**	175.12
100	29.19	**800**	233.49
200	58.37	**1,000**	291.86
250	72.97	**1,500**	437.80
300	87.56	**2,000**	583.73
400	116.75	**4,000**	1,167.45
500	145.93	**10,000**	2,918.64

Recommended indoor light levels (EN 12464-1)

Area or task	Lux	Foot-candles
Corridors and circulation areas	100	9.3
Store rooms	100	9.3
Toilets and washrooms	200	18.6
Retail sales areas	300	27.9
Classrooms (schools)	300	27.9
Writing, typing, reading, data processing	500	46.5
Technical drawing	750	69.7

LED and incandescent bulb equivalents (approximate)

Old incandescent bulb	Minimum light output	Typical LED
40 W	450 lm	4–6 W
60 W	800 lm	8–10 W
75 W	1,100 lm	11–13 W
100 W	1,600 lm	15–18 W

Sources and method

- **NIST Special Publication 811** — Guide for the Use of the International System of Units (www.nist.gov/pml/special-publication-811)
- **EN 12464-1** — Light and lighting — lighting of indoor work places (maintained illuminance)
- **US FTC Lighting Facts** — Lumen equivalents for replacing incandescent bulbs

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