

# MODERN LINEAR

## ENGINEERING CONVERSION FACTORS

QUANTITY	CONVENTIONAL		SI UNIT	CONVERSION FACTORS
	Inch Unit	Metric Unit (MKS)		
LENGTH	Inch <b>in.</b>	Meter <b>m</b>	Metre <b>m</b>	1 in. = 25.4 mm 1 mm = 0.03937 in. 1 m = 3.2808 ft. 1 ft. = 0.3048 m
AREA	Square Inch <b>in.<sup>2</sup></b>	Square Meter <b>m<sup>2</sup></b>	Square Metre <b>m<sup>2</sup></b>	1 in. <sup>2</sup> = 6.4516 cm <sup>2</sup> 1 cm <sup>2</sup> = 0.155 in. <sup>2</sup> 1 m <sup>2</sup> = 10.764 ft. <sup>2</sup> 1 ft. <sup>2</sup> = 0.092903 m <sup>2</sup>
MASS	Pound <b>lb<sub>m</sub></b>	Kilogram <b>kg</b>	kilogram <b>kg</b>	1 lb <sub>m</sub> = 0.45359237 kg 1 kg = 2.2046 lb
FORCE	Pound Force <b>lb<sub>f</sub></b>	Kilogram Force <b>kg<sub>f</sub></b>	Newton <b>N</b>	1 lb <sub>f</sub> = 0.45359237 kg <sub>f</sub> 1 lb <sub>f</sub> = 4.44822 N 1 kg <sub>f</sub> = 2.2046 lb <sub>f</sub> 1 kg <sub>f</sub> = 9.80665 N 1 N = 0.1019716 kg <sub>f</sub> 1 N = 0.224809 lb <sub>f</sub>
STRESS or PRESSURE	Pounds per square inch <b>lb<sub>f</sub>/in.<sup>2</sup></b>	Kilograms per square meter <b>kg<sub>f</sub>/m<sup>2</sup></b>	Pascal <b>Pa</b>	1 MPa = 10 <sup>6</sup> N/m <sup>2</sup> = N/mm <sup>2</sup> 1 kPa = 10 <sup>3</sup> N/m <sup>2</sup> 1 lb <sub>f</sub> /inch <sup>2</sup> = 0.070307 kg <sub>f</sub> /cm <sup>2</sup> 1 lb <sub>f</sub> /inch <sup>2</sup> = 7.0307 x 10 <sup>-4</sup> kg <sub>f</sub> /mm <sup>2</sup> 1 lb <sub>f</sub> /inch <sup>2</sup> = 6.8947 x 10 <sup>-3</sup> N/mm <sup>2</sup> (MPa) 1 kg <sub>f</sub> /cm <sup>2</sup> = 14.2233 lb <sub>f</sub> /in. <sup>2</sup> 1 kg <sub>f</sub> /cm <sup>2</sup> = 9.80665 x 10 <sup>-2</sup> N/mm <sup>2</sup> (MPa)
TORQUE or WORK	Inch Pounds <b>lb<sub>f</sub>-in.</b>	Kilogram Meters <b>kg<sub>f</sub>-m</b>	Newton-Metres <b>Nm</b>	1 lb <sub>f</sub> -in. = 1.1521 kg <sub>f</sub> -cm 1 kg <sub>f</sub> -cm = 0.8679 lb <sub>f</sub> -in. 1 lb <sub>f</sub> -in. = 0.1129848 Nm 1 kg <sub>f</sub> -m = 9.80665 Nm 1 kg <sub>f</sub> -cm = 9.80665 x 10 <sup>2</sup> Nm 1 Nm = 8.85 lb <sub>f</sub> -in. 1 Nm = 10.19716 kg <sub>f</sub> -cm
POWER	Foot pound per minute <b>lb<sub>f</sub>-ft./min.</b>	Force per second <b>kg<sub>f</sub>-m/s</b>	Newton Metre per second <b>Nm/s</b>	1 kW = 1000 Nm/s 1 kW = 60,000 Nm/s 1 kW = 44,220 lb <sub>f</sub> -ft./min. 1 kW = 1.341 hp 1 hp = 75 kg <sub>f</sub> -m/s 1 hp = 44,741 Nm/min. 1 hp = 33,000 lb <sub>f</sub> -ft./min. 1 hp = 0.7457 kW
VELOCITY	Feet per second <b>ft./s</b>	Meters per second <b>m/s</b>	Metres per second <b>m/s</b>	1 ft./sec. = 0.3048 m/s 1 in./sec. = 2.54 cm/s 1 ft./sec. = 0.00508 m/s 1 mile/hr. = 0.44704 m/s 1 km/hr. = 0.27777 m/s 1 mile/hr. = 1.609344 km/hr.
ACCELERATION	Feet per second squared <b>ft./s<sup>2</sup></b>	Meters per second squared <b>m/s<sup>2</sup></b>	Metres per second squared <b>m/s<sup>2</sup></b>	1 ft./s <sup>2</sup> = 0.3048 m/s <sup>2</sup>