

Appendix 4: Units, Conversions, and Constants

Table A4.1 Factors for Conversion from Imperial to SI Units

Parameter	Symbol	Imperial Unit	Equivalent SI Unit
Mass	m	1 slug	14.594 kg
Length	l	1 ft	0.3048 m
Velocity	V	1 ft/s	0.3048 m/s
Acceleration	a	1 ft/s ²	0.3048 m/s ²
Force	F	1 Lb	4.448 N
Moment	M	1 Lbft	1.356 Nm
Density	ρ	1 slug/ft ³	515.383 kg/m ³
Inertia	I	1 slugft ²	1.3558 kgm ²

Table A4.2 Useful Constants

Constant	Symbol	Imperial Unit	SI Unit
1 knot	kt	1.689 ft/s	0.515 m/s
Sea level air density	ρ_0	0.00238 slug/ft ³	1.225 kg/m ³
Speed of sound at sea level	a_0	1116.44 ft/s	340.29 m/s
Radian	rad	57.3 deg	57.3 deg
Gravitational acceleration	g	32.17 ft/s ²	9.81 m/s ²