

DIMENSIONS OF COMMON VARIABLES		
	MLT θ	FLT θ
Quantity	Dimension	Dimension
Mass	[M]	$\left[\frac{FT^2}{L}\right]$
Force	$\left[\frac{ML}{T^2}\right]$	[F]
Length	[L]	[L]
Time	[T]	[T]
Temperature	θ	θ
Area	$[L^2]$	$[L^2]$
Velocity	$\left[\frac{L}{T}\right]$	$\left[\frac{L}{T}\right]$
Acceleration	$\left[\frac{L}{T^2}\right]$	$\left[\frac{L}{T^2}\right]$
Angular velocity	$\left[\frac{1}{T}\right]$	$\left[\frac{1}{T}\right]$
Angular Acceleration	$\left[\frac{1}{T^2}\right]$	$\left[\frac{1}{T^2}\right]$
Linear Momentum	$\left[\frac{ML}{T}\right]$	[FT]
Mass Flow Rate \dot{m}	$\left[\frac{M}{T}\right]$	$\left[\frac{FT}{L}\right]$
Volume Flow Rate $\left(\frac{\dot{m}}{\rho}\right)$	$\left[\frac{L^3}{T}\right]$	$\left[\frac{L^3}{T}\right]$
Force	$\left[\frac{ML}{T^2}\right]$	[F]
Torque	$\left[\frac{ML^2}{T^2}\right]$	[FL]
Work (Energy) (W)	$\left[\frac{ML^2}{T^2}\right]$	[FL]
Work rate, Power $P = \dot{W}$	$\left[\frac{ML^2}{T^3}\right]$	$\left[\frac{FL}{T}\right]$
Heat	$\left[\frac{ML^2}{T^2}\right]$	[FL]
Heat flow rate (\dot{q})	$\left[\frac{ML^2}{T^3}\right]$	$\left[\frac{FL}{T}\right]$

Mechanical equivalent of heat (J)	-	-
Specific volume	$\left[\frac{L^3}{M} \right]$	$\left[\frac{L^3}{M} \right]$
Density ρ	$\left[\frac{M}{L^3} \right]$	$\frac{FT^2}{L^4}$
pressure	$\left[\frac{M}{LT^2} \right]$	$\left[\frac{F}{L^2} \right]$
Stress(normal or shear)	$\left[\frac{M}{LT^2} \right]$	$\left[\frac{F}{L^2} \right]$
frequency	$\left[\frac{1}{T} \right]$	$\left[\frac{1}{T} \right]$
Dynamic Viscosity	$\left[\frac{M}{LT} \right]$	$\left[\frac{FT}{L^2} \right]$
Kinematic Viscosity	$\left[\frac{L^2}{T} \right]$	$\left[\frac{L^2}{T} \right]$
Thermal Conductivity	$\left[\frac{ML}{T^3\theta} \right]$	$\left[\frac{F}{LT} \right]$
Specific Heat c_p and c_v	$\left[\frac{L^2}{T^2\theta} \right]$	$\left[\frac{L^2}{T^2\theta} \right]$
Thermal diffusivity (α)	$\left[\frac{L^2}{T} \right]$	$\left[\frac{L^2}{T} \right]$
Specific entropy	$\left[\frac{L^2}{T^2\theta} \right]$	$\left[\frac{L^2}{\theta T^2} \right]$
Coefficient of thermal expansion β	$\frac{1}{\theta}$	$\frac{1}{\theta}$
Dimensional constant , g_c	1	1
Heat transfer coefficient h and overall heat transfer coefficient (U)	$\left[\frac{M}{T^3\theta} \right]$	$\left[\frac{F}{TL\theta} \right]$
Surface tension (σ)	$\left[\frac{M}{T^2} \right]$	$\left[\frac{F}{L} \right]$