

Answer on Question #60749-Physics-Classical Mechanics

What is unit of unit vector?

Answer

The unit vector is dimensionless because it is defined as:

$$\hat{\mathbf{a}} = \frac{\mathbf{a}}{|\mathbf{a}|},$$

where \mathbf{a} is some vector.

$\hat{\mathbf{a}}$ has units

$$[\hat{\mathbf{a}}] = \frac{[\mathbf{a}]}{[|\mathbf{a}|]} = \frac{[\mathbf{a}]}{[\mathbf{a}]} = 1.$$

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