This formula gives luminance contrasts which range from 0 to 1 for targets which have details darker than the background and from 0 to infinity for targets which have details brighter than the background. It is widely used for the former, e.g. printed text on white paper.

Another form of luminance contrast for a uniform targets seen against a uniform background is defined as

$$C = L_t / L_b$$

where: C = luminance contrast
L_b = luminance of the background
L_t = luminance of the target

This formula gives luminance contrasts that can vary from 0, when the target has zero luminance, to infinity, when the background has zero luminance. It is often used for self-luminous displays, e.g. computer monitors.

For targets that have a periodic luminance pattern, e.g. a grating, the luminance contrast is given by

$$C = (L_{max} - L_{min}) / (L_{max} + L_{min})$$

where: C = luminance contrast
L_{max} = maximum luminance
L_{min} = minimum luminance

This formula gives luminance contrasts that range from 0 to 1, regardless of the relative luminances of the target and background. It is sometimes called the luminance modulation.

Given the different forms of luminance contrast measure, it is always important to understand which is being used.

Visual acuity is a measure of the ability to resolve detail for a target with a fixed luminance contrast. Visual acuity is most meaningfully quantified as the angle subtended at the eye by the detail that can be resolved on 50 percent of the occasions the target is presented. This angle is usually expressed in minutes of arc. Using this measure, the visual acuity corresponding to 'normal' vision is taken to be 1 min arc. Unfortunately for simplicity, there are several other measures used to quantify visual acuity. One is the reciprocal of the angle subtended at the eye by the detail that can be resolved on 50 percent of the occasions the target is presented. A relative measure is used by the medical profession. This is the distance at which a patient can read a given size of letter or symbol relative to the distance an average member of the population with normal vision could read the same letter or symbol. For example, if the patient is said to have 20/200 vision it means that the patient can only read a given letter at 20 feet that an average member of the population with normal vision can read from 200 feet.

Again, given the different forms of visual acuity that are used by different professions, it is important to be sure which metric is being used.