What is Rayleigh Criterion?

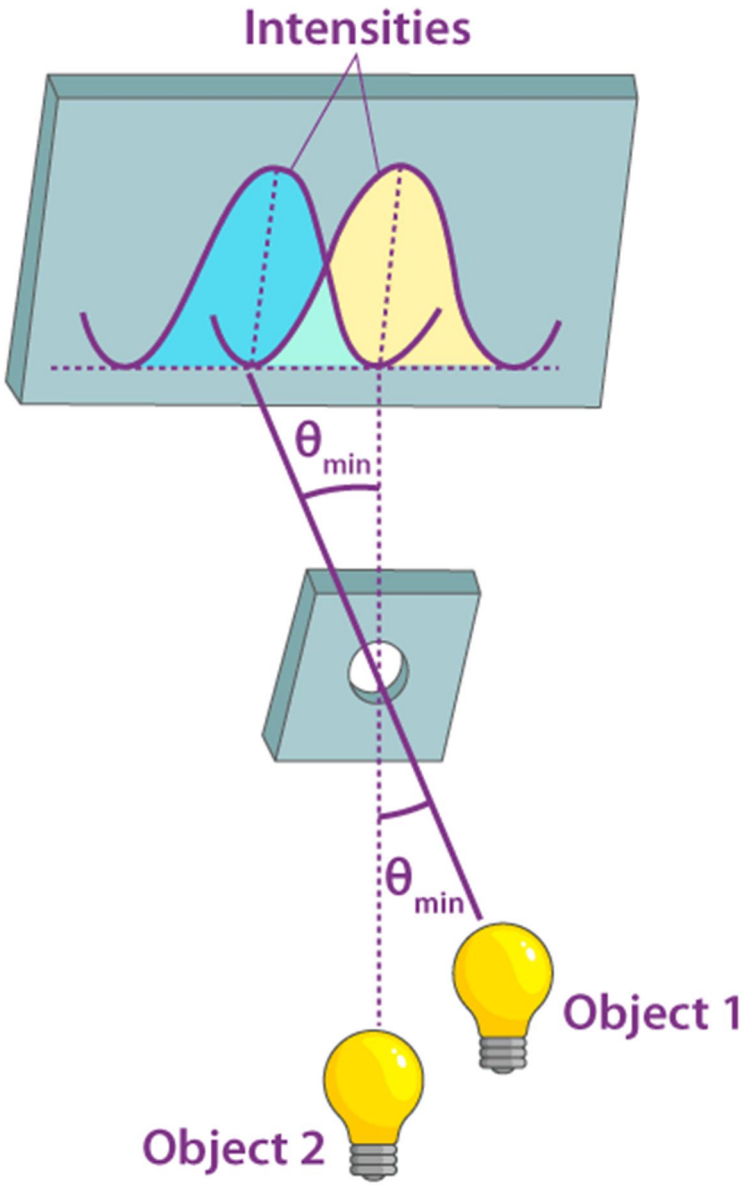
Consider the diffraction pattern for a circular aperture as shown in the figure below.

It can be shown that, for a circular aperture of diameter D, the first minimum in the diffraction pattern occurs at

$\Theta = 1.22\lambda D$

The accepted criterion for determining the diffraction limit to resolution based on this angle was developed by Lord Rayleigh in the 19th century.

“**Rayleigh criterion for the diffraction limit to resolution states that two images are just resolvable when the centre of the diffraction pattern of one is directly over the first minimum of the diffraction pattern of the other**.”



In the figure, the first minimum is at an angle

$\Theta=1.22\lambda D$

So this means that two point objects are just resolvable if they are separated by an angle

$\Theta=1.22\lambda D$