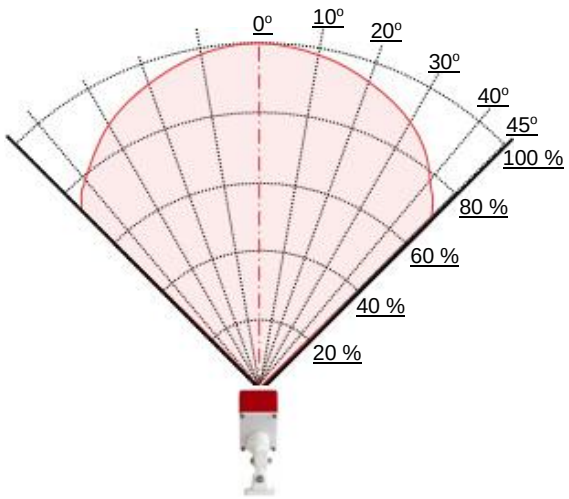
Cone of Vision



Cone of Vision.

The cone of vision of a flame detector depends on the shape and dimensions of the window/housing and the position of the sensor. With IR sensors lamination of the filter plays a role and can also limit the cone of vision. A wider cone doesn't automatically mean that the detector is better. Carefully aiming is needed to avoid having false alarm sources or friendly fires in the field of view.
The cone is three-dimensional and doesn't need to be perfectly cylindrical. The horizontal and vertical field of view are mostly different due to the shape of the housing or the location of mirrors. (applicable for flame detectors with an through the window optical self-test). Different fuels may result in different Cone of Visions in the same detector.

Very important is the sensitivity at the 45 degree edges. This must be minimum 50% of the maximum sensitivity on the central axis according to the American standard FM3260. Some detectors have a 70% or more performance here. In reality these detectors have a cone of vision that is wider than 90 degrees but the manufacturer normally will not provide this information. (See top picture). A high sensitivity at the edges of the Cone of Vision is an advantage when designing a flame detection system.