

# How Different Species see Light

Not all animals see the world in the same way as we do. Understanding this helps us to appreciate the importance of providing the best lighting environment for the type of animals we have in our barns.

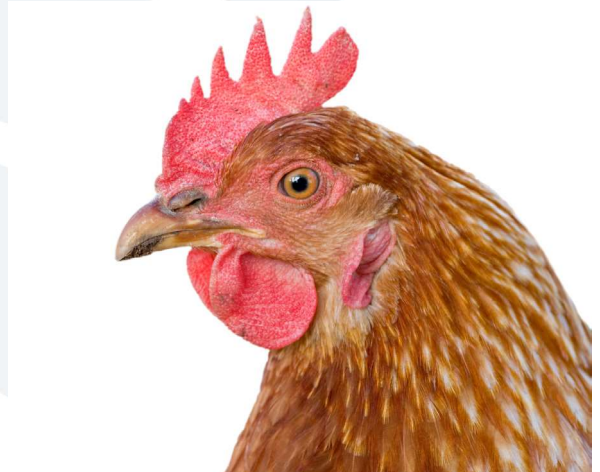
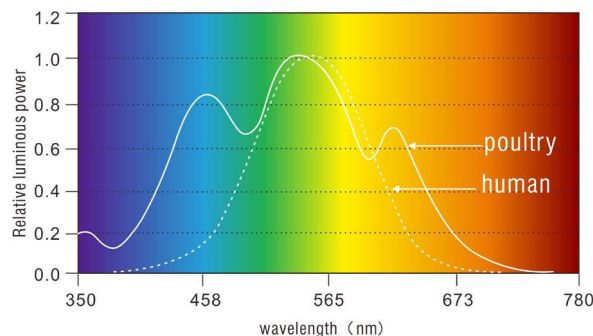
So why is it that different species see things differently?

Our eyes are designed to direct light rays to the retina where they fall upon millions of photoreceptors, essentially light-sensitive cells, called cones and rods. These cones and rods convert light waves into information our brains can process, such as colour, shape, and motion.

In essence, rods interpret light, and cones interpret colours. Most animals have a combination of cones and rods and it is this combination that is so important.

Humans have trichromatic vision, meaning that we have three pigment cones in our eyes. Each cone type contains a pigment sensitive to particular wavelengths of light. In our case we can see red, blue and green.

The specific wavelengths, which would be considered the true primary value of each,



are 700.0 nm wavelength for red, 546.1 nm for green, and 435.8 nm for blue.

Our trichromatic vision gives us a very good colour perception within the 300nm to 900nm wavelength range.

Pigs and other mammals have dichromatic vision, or two pigment cones (green and blue) which limits the colour spectrum they can see. Indeed, some animals have monochromatic vision with only one pigment cone and see only in black and white.

Poultry however have tetrachromatic vision, meaning that they can also see much more in the ultraviolet spectrum.

So, remember that what appears to be a pleasing light to humans, may not be optimum for our animals.

At Gallina LED we sell lighting products that have been designed for poultry, not humans!

LED: Improve Performance, Improve Welfare, Save Energy!