

The Tiny Slice of Spectrum We Can See

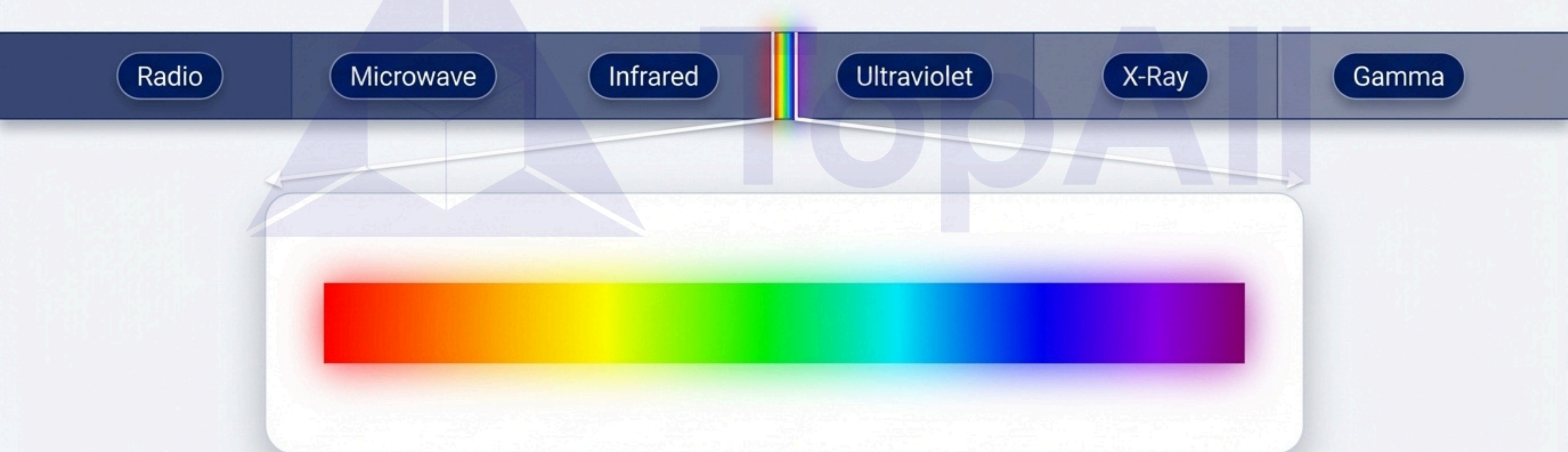
Visible Light in the Electromagnetic Spectrum



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A Fraction of the Electromagnetic Spectrum

Visible rays are the most familiar form of electromagnetic waves, but they represent only a tiny slice of the total spectrum. They are sandwiched precisely between longer Infrared waves and shorter Ultraviolet waves.

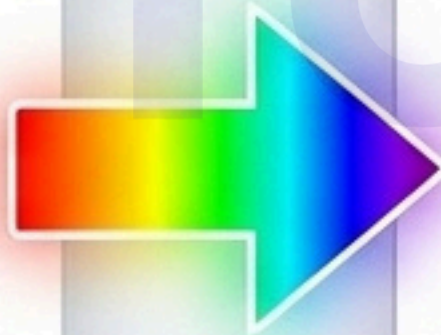


The Wavelength Range

This narrow band of 700 nm to 400 nm contains all the visible light emitted or reflected from objects around us.

FROM (LONGEST WAVELENGTH)

700 nm



TO (SHORTEST WAVELENGTH)

400 nm



You've Learned the Theory. Let's Test Them Now.

$$E=mc^2$$



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Key Highlights

- » Free Study Material, Videos & Infographics
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- » Get Clear Explanations, Not Just Marks
- » Track Your Performance Smarter

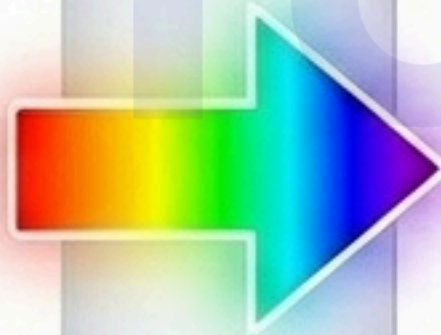


The Frequency Range

As wavelength decreases across the visible spectrum, frequency proportionally increases. The human eye operates exclusively within this precise vibrational range.

LOWEST FREQUENCY

$\sim 4 \times 10^{14}$ Hz



HIGHEST FREQUENCY

$\sim 7 \times 10^{14}$ Hz

Biological Perception of the Spectrum

Infrared Waves



Detected by snakes.
Invisible to humans, but
sensed as heat.

Visible Light



Detected by the Human Eye.
Our biological receivers are
specifically tuned to the
400-700nm range to gather
information about our world.

Ultraviolet Rays



Detected by many insects.
Their 'visible' range extends
well beyond human limits
into the UV spectrum.

Key Takeaways: Visible Rays



Sensed by Humans

The only part of the EM spectrum detected by the human eye.



700 nm to 400 nm

The exact wavelength boundaries.



4×10^{14} Hz to 7×10^{14} Hz

The corresponding frequency boundaries.



Between IR and UV

Physically sandwiched between Infrared and Ultraviolet.

✓ Mastery complete. You now know the exact physical boundaries of human vision.



You've Learned the Theory.

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