

Lighting General Info Session



Date: _____

Location: _____

Subject : Light principles and LED Lighting

The purpose of this info session and training is to educate about LED lighting and the Principles of Light in general.

Training and test conducted by

Northern Lighting

Richmond British Columbia, CANADA

www.northernled.ca +1 800 8941 LED

Goal

Through this information session and training we wish to educate and elaborate on the latest technology and development in the LED lighting field and the Principles of Light in general.

Introduction to LED

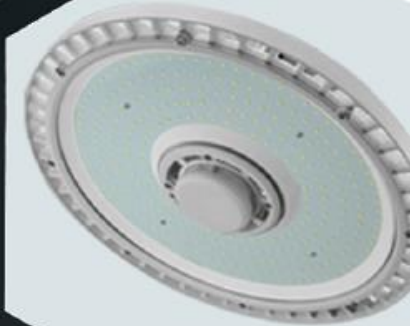
The light-emitting diode (LED) is one of today's most energy-efficient and rapidly-developing lighting technologies. Quality LED lights last longer, are more durable, and offer comparable or better light quality than other types of lighting.

LED is a highly energy efficient lighting technology, and has the potential to fundamentally change the future of lighting worldwide. LEDs use at least 75% less energy, save on electricity costs and last much longer than traditional lights.

LED is the future of Lighting.



Commercial &
Industrial LED
Lighting





What is LED light?

Who invented LED ?

What is the overall value in LEDs ?

Name the four types of lighting technologies.

What is CRI?

Good light quality



**Northern LED Lamps
CRI 85 and above**

Bad light quality



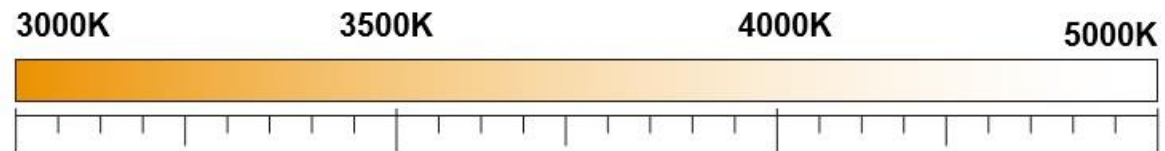
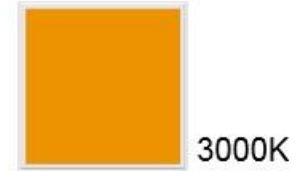
**Fluorescent Lamps
CRI 60 and below**

HID / Incandescent Lights are an average 30 -50 CRI

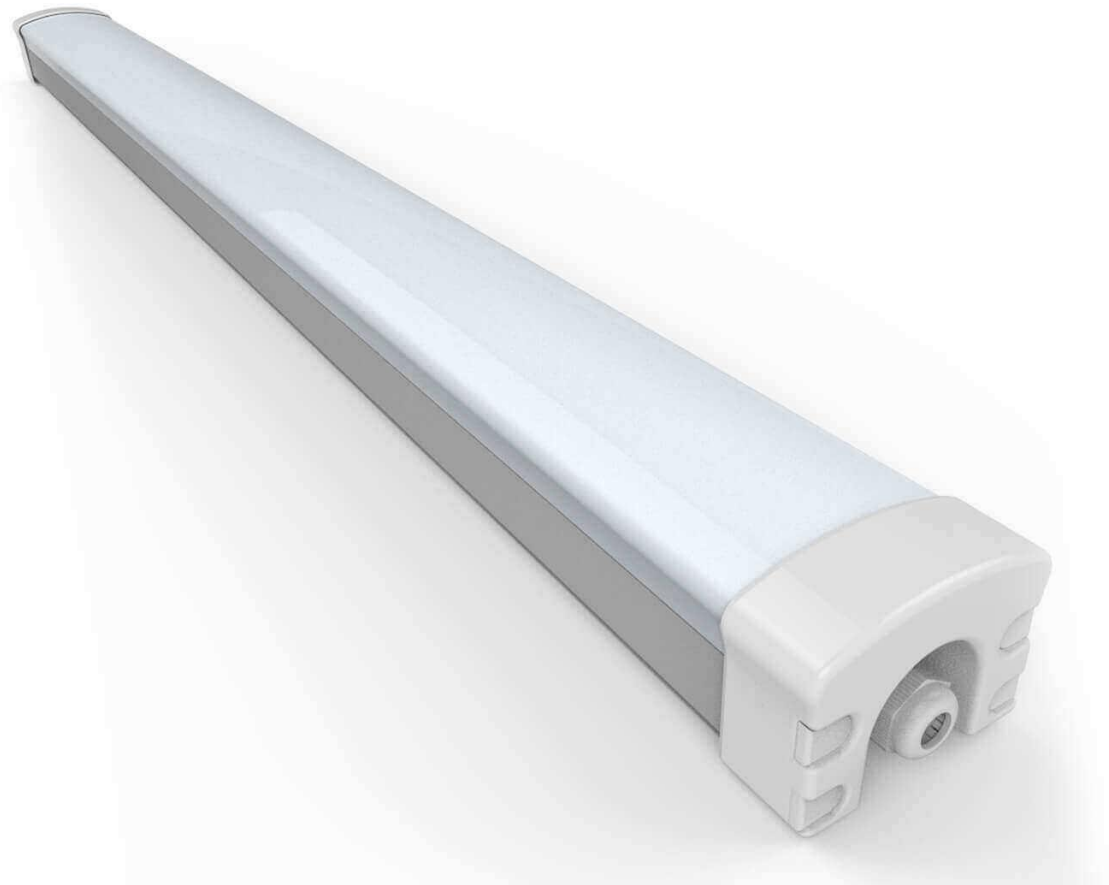


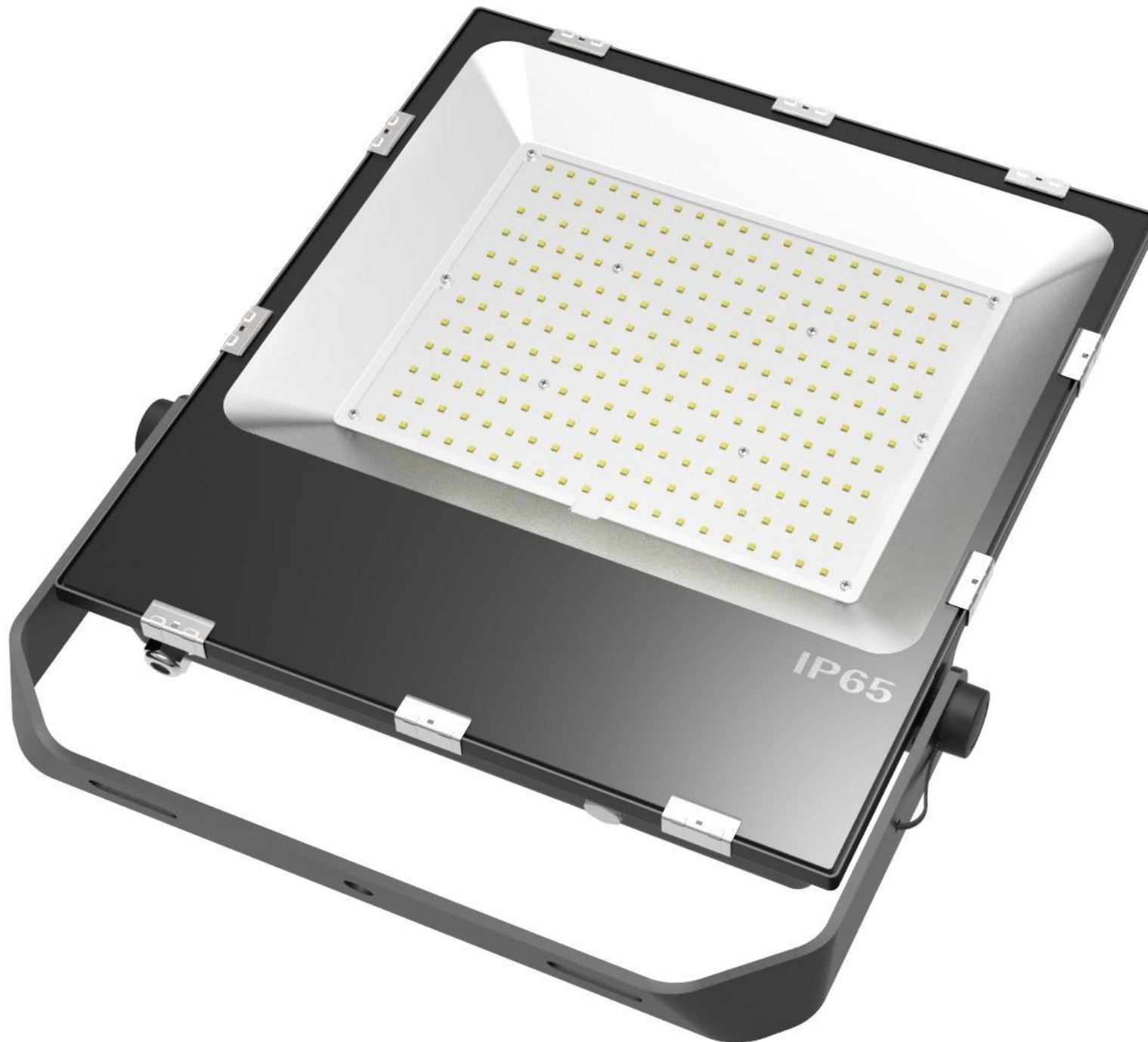
WWW.NORTHERNLED.CA
INFO@NORTHERNLED.CA
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What is CCT?



What is IKO rating?





What is IP
Rating?

Measurement of Light

- Is light measured in Lumen/LUX/Candella?
- Is ambiance measured in Lumen/LUX/Candella?
- How do we calculate LUX and what standards do we use as a baseline ?

Candela indicates the **STRENGTH** of the light emission

Candela

Lumen describes the amount of light that is radiated

Lumen

Lux indicated the illumination intensity of an area.

Lux

- What is Kelvin scale and how is it related to lighting?

1000

2000

3000

4000

5000

6000

7000

8000

9000

10000

Indirect Lighting

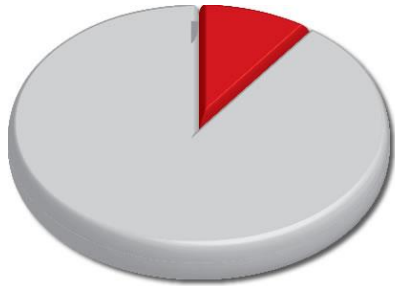
- What is indirect lighting ?
- What is glare and how do we control glare ?



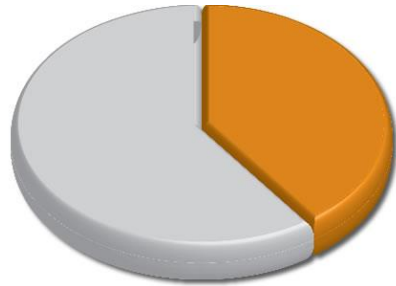
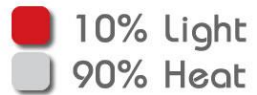


- Does LED run on DC or AC current ?
- Why does LED require a driver/transformer ?
- Why is there 120v 240v 347v 480 and 600v ?
- What is a power factor ?

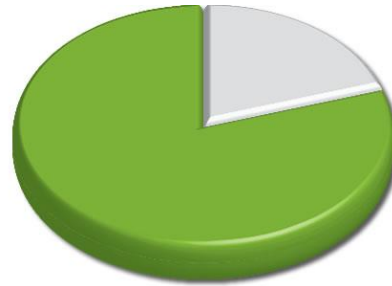
Power & Voltage



Incandescent



CFL



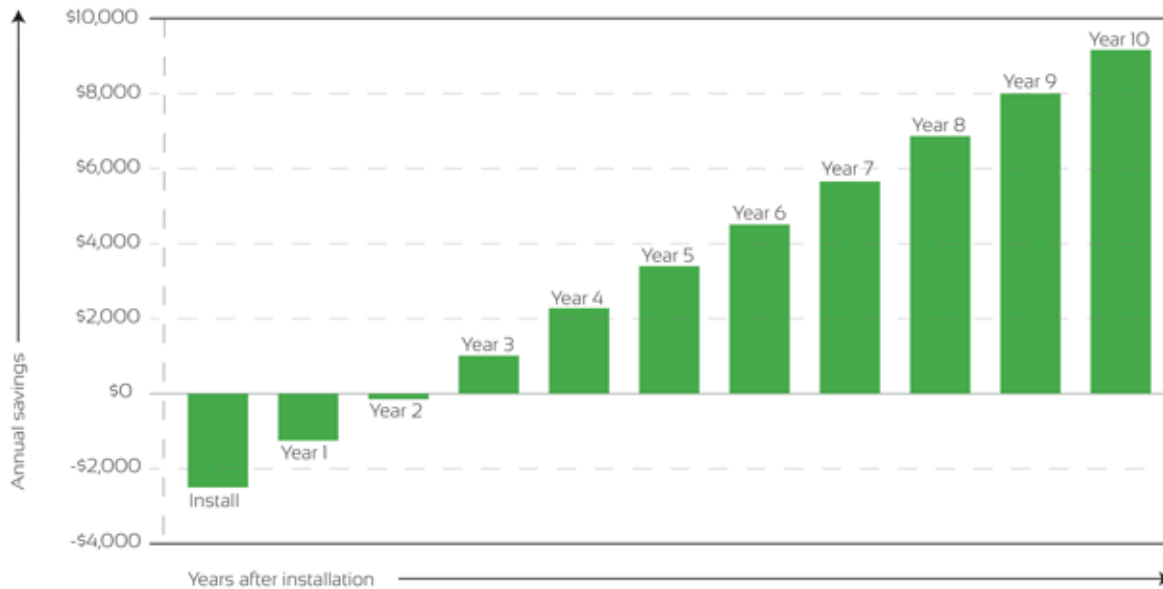
LED



- How do you measure the efficiency of LEDs ?
- What is a photocell and where is the best installation of a photocell ?

Energy Saving

Return on investment over 10 years

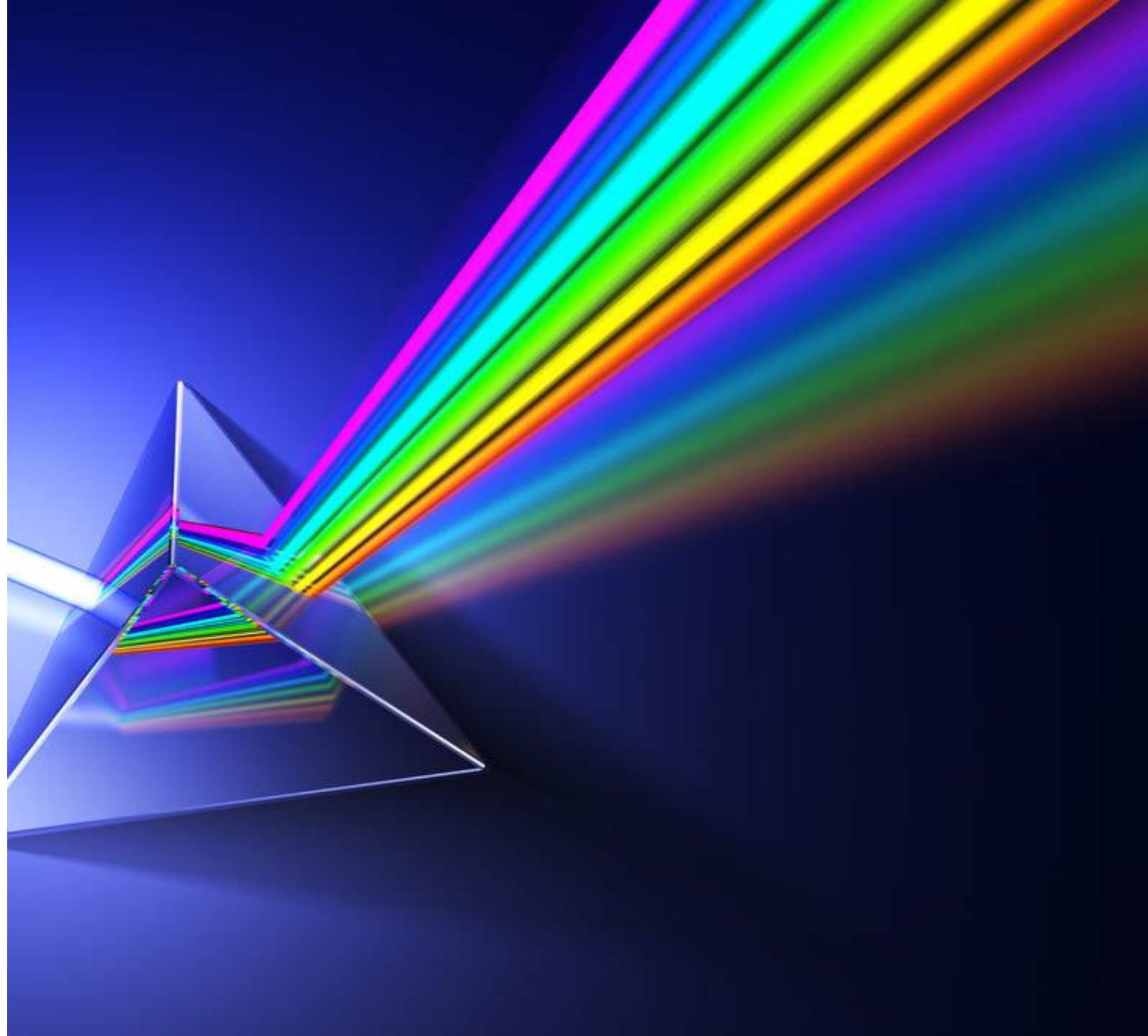


- How do you calculate amperage and how does saving amperage helps businesses ?
- How do we calculate ROI? What are the main components that a salesman needs in order to calculate ROI for customers ?

ROI - Return on Investment \$\$

Light and perception

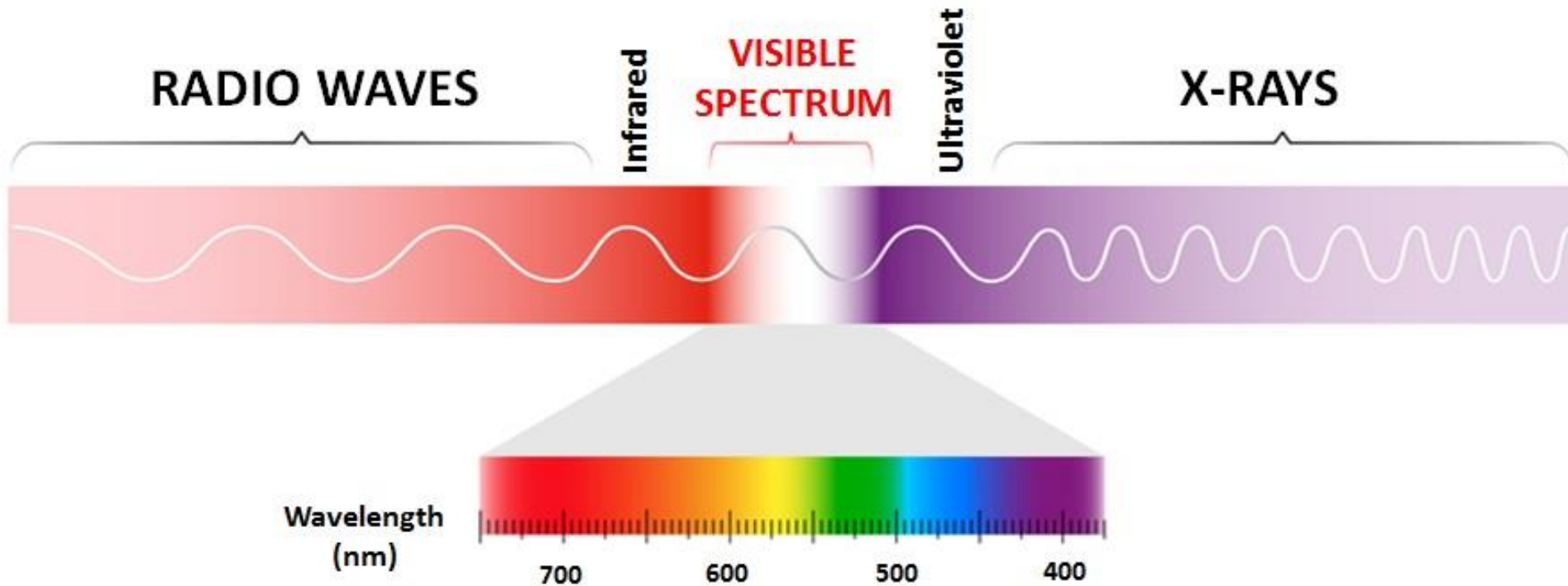
- What does VIBGYOR stand for?
- How does human eye receive light and read light ?
- What is visible light and what is the measurement of visible light on the light scale?



Does general LED lighting contain infra red or ultra violet ?

What is Photosynthesis?

VISIBLE AND INVISIBLE LIGHT





- Why is fluorescent dangerous and how do we avoid contamination and save the environment ?
- What is EMF and how does it affect our health ?
- What is PCB and how does it affect the environment ?
- What does CE and ROHS stand for ?

Safety & Environment friendly



**NORTHERN
LIGHTING**

Thank you for
your attention!