

Andy Rutter

Lighting Techniques

Learn the basics of Photographic Lighting.

Introduction

Why is having the correct lighting important for good photography?

- Because it's not objects, we see but the light reflected off them
- Lighting is used to see how on-screen objects look
- Where objects are in relation to one another
- Can emphasis an object or create a focal point
- Different lighting can effect the mood or emotion of a photograph

Lighting Techniques

Topics

1. **Types of Lighting**
2. **Three Point Lighting**
3. **Basic Portraiture**

1. Types of Lighting

There are many ways lighting positioning can create mood or emotion, but first let's discuss the two types of lighting:

- **Artificial Lighting** – Such as light bulbs, generated from electrical sources
- **Natural Lighting** – Such as the light we get from the sun

1. Types of Lighting

Both types of lighting can illuminate an object/subject albeit:

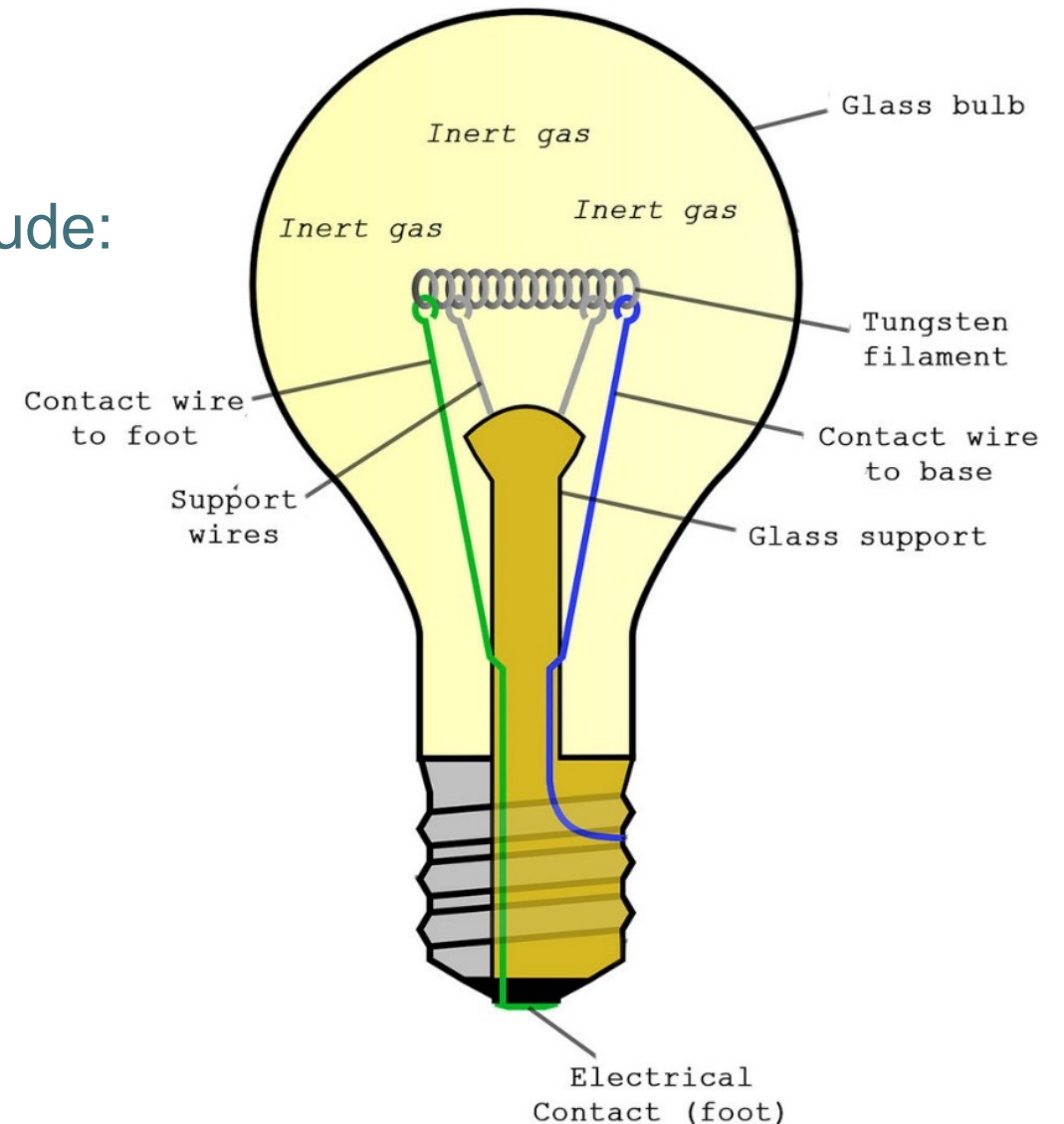
- **Directional light** - like that of spotlights, gives a sharp beam and produces harsh shadows
- **Diffused light** - like that of floodlights, gives a wide beam illuminating a large area and produces soft, translucent shadows
- **Bounced Light** - like that of a reflected off a card or a wall can change of the colour of an object/subject

1. Types of Lighting

Artificial Lighting known as incandescent lamps are filled with inert gasses that may include:

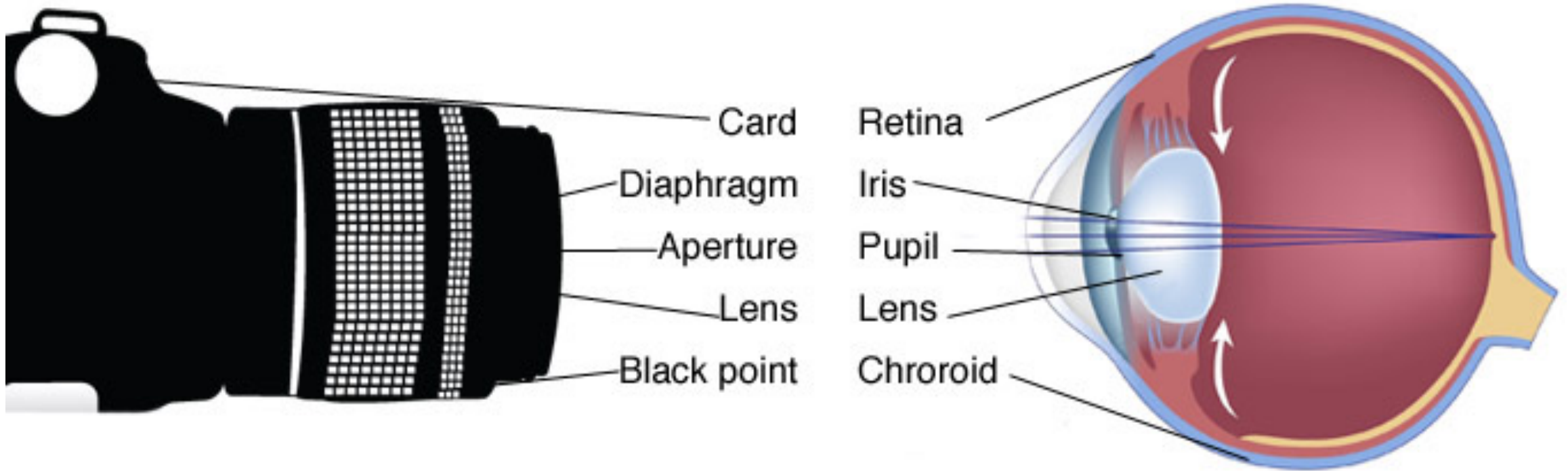
- Halogen
- Mercury
- Fluorescent
- Neon
- Light Emitting Diode (LED)
- Among others..

Parts of an Incandescent Bulb



1. Types of Lighting

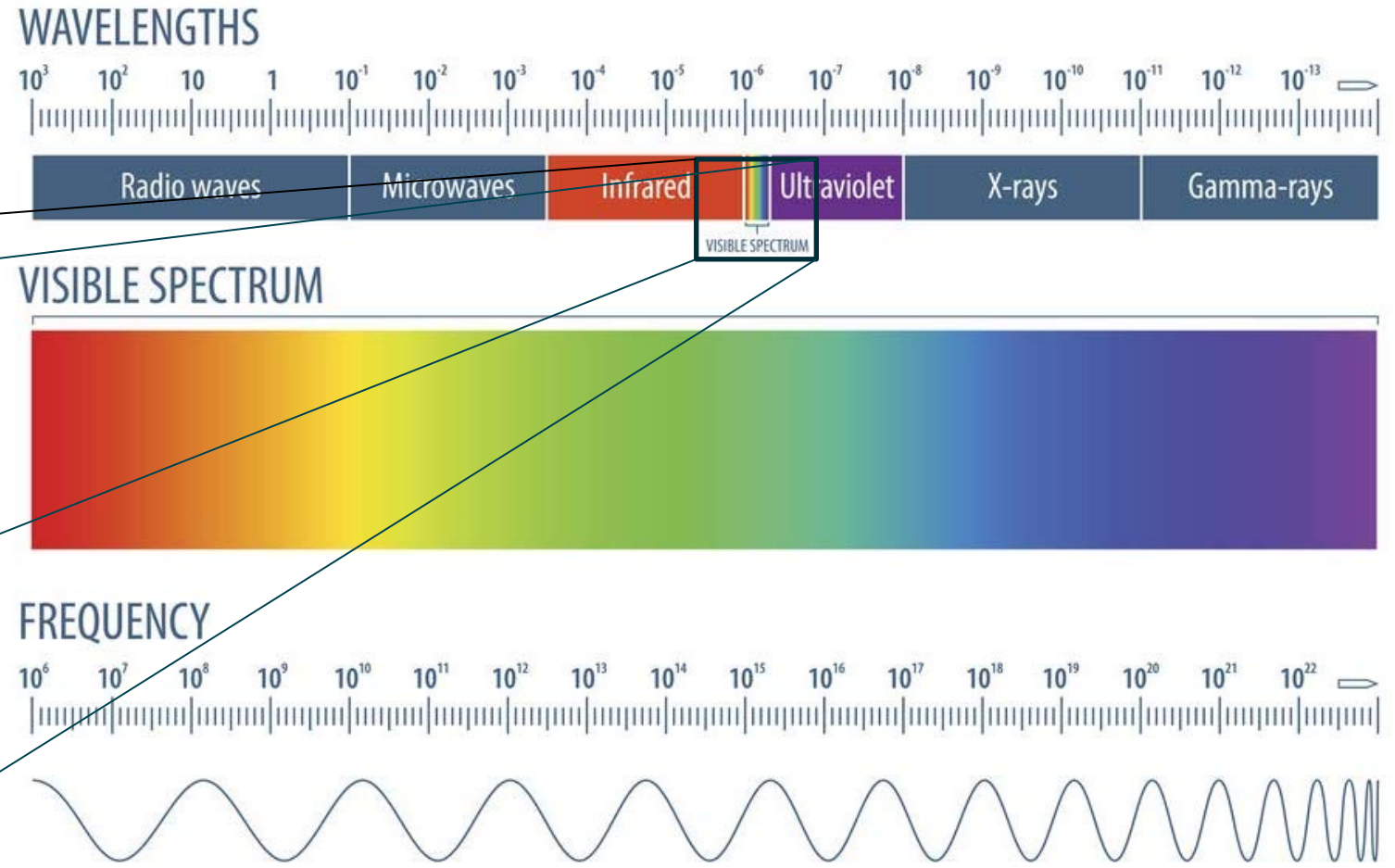
Different types of bulbs emit different light waves depending on the type of gas. Our eyes struggle to see the spectrum of light, but cameras have no problem.



1. Types of Lighting

ELECTROMAGNETIC SPECTRUM

There is only a small portion of the light spectrum we can see.



1. Types of Lighting

Any of various devices that produce light by heating a suitable material to a high temperature.

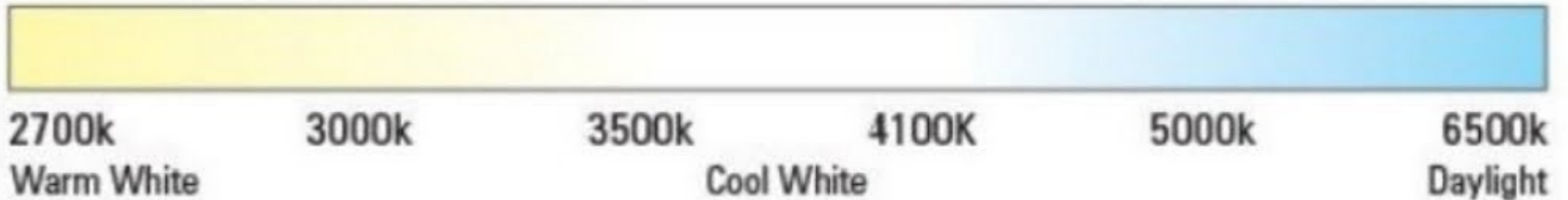
When any solid or gas is heated, commonly by combustion or resistance to an electric current, it gives off light of a colour (spectral balance) characteristic of the material.

When electricity is passed through a high-pressure gas chamber, the particles get excited and give off waves in the form of a glow.

Let's look at how some of these gasses appear to the eye:

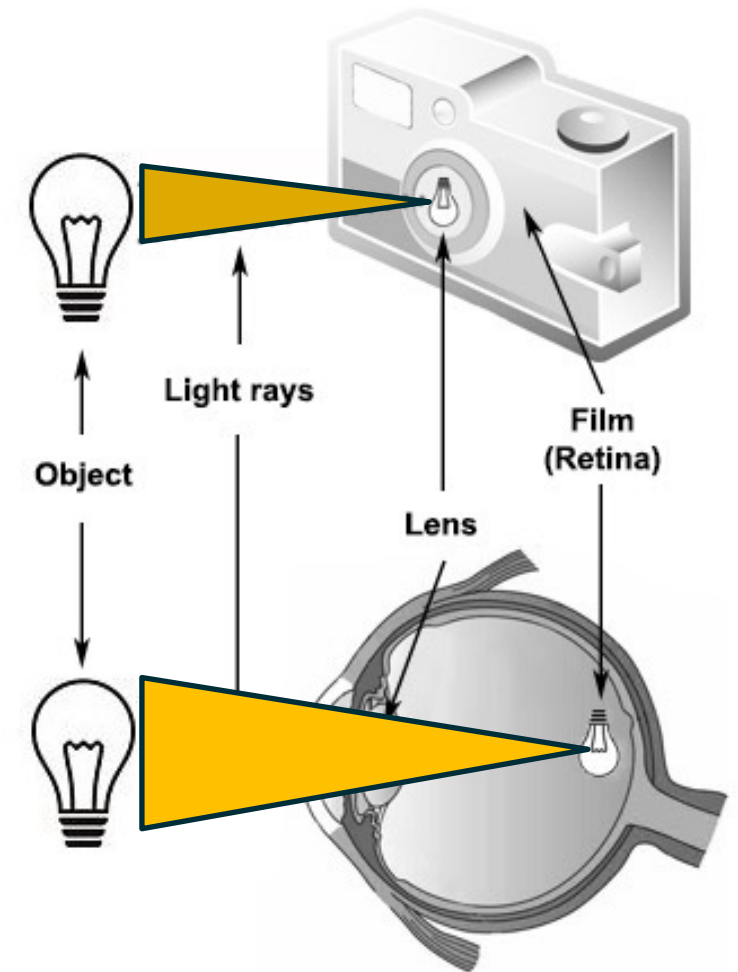
1. Types of Lighting

We can measure artificial light using **Kelvin Colour Temperatures**



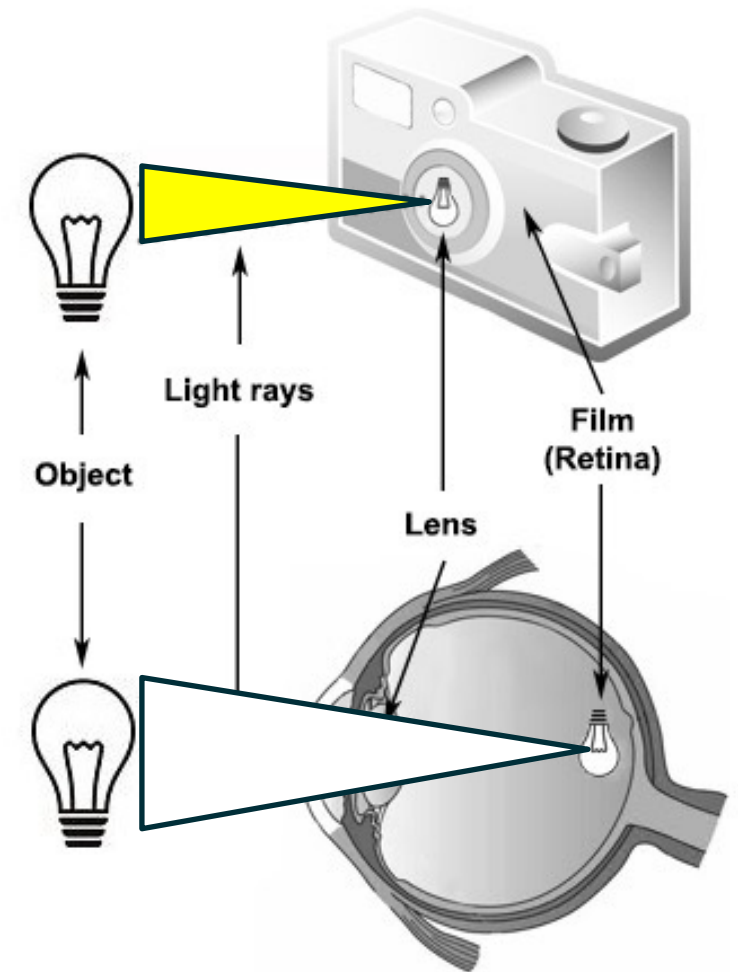
1. Types of Lighting

Sodium (Street Lights) looks **orange** to the eye
But cast a **gold** colour on images



1. Types of Lighting

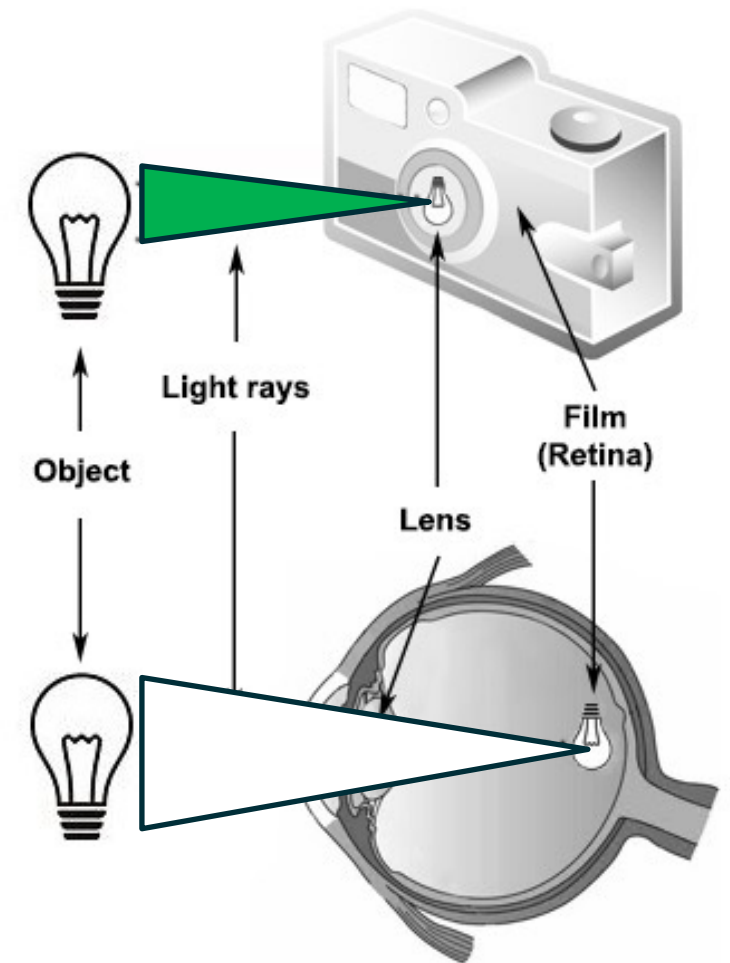
Tungsten (Display Cases) looks **white** to the eye
But cast a **yellow** colour on images



1. Types of Lighting

Mercury (Factories and arenas) and **Fluorescent** (Institutional buildings) look **white** to the eye

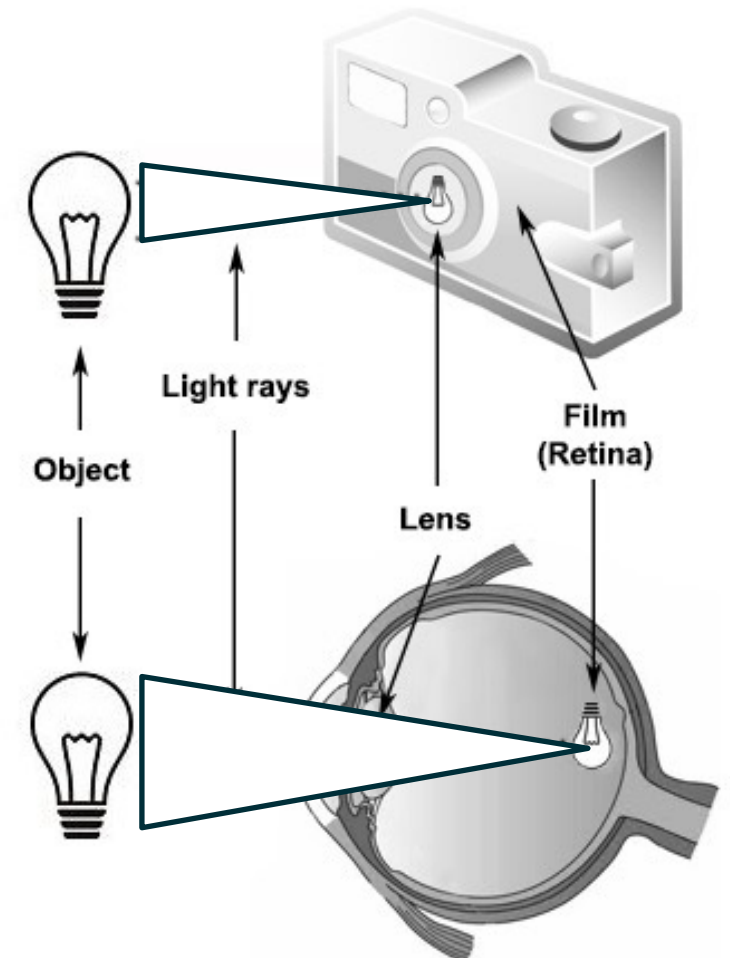
But cast a **green** colour on images



1. Types of Lighting

LED Lighting appear in various colours and can range from **very stable** to **very unstable**.

Photographers use bulbs specifically designed to be more stable or in other words.. **What you see is what you get...**



1. Types of Lighting

Natural lighting, can also produce a wide variety of colours, even though it is the same light source, depending on **three things**:

- **Direct** – Sun light without clouds gives a warmer tones, with higher contrast and darker shadows
- **Diffused** – A cloud cover gives cooler tones, with lower or more subtle contrast and no shadows
- **Time of Day** – Light is cast a variety of colours



1. Types of Lighting

Direct Lighting



Diffused Lighting



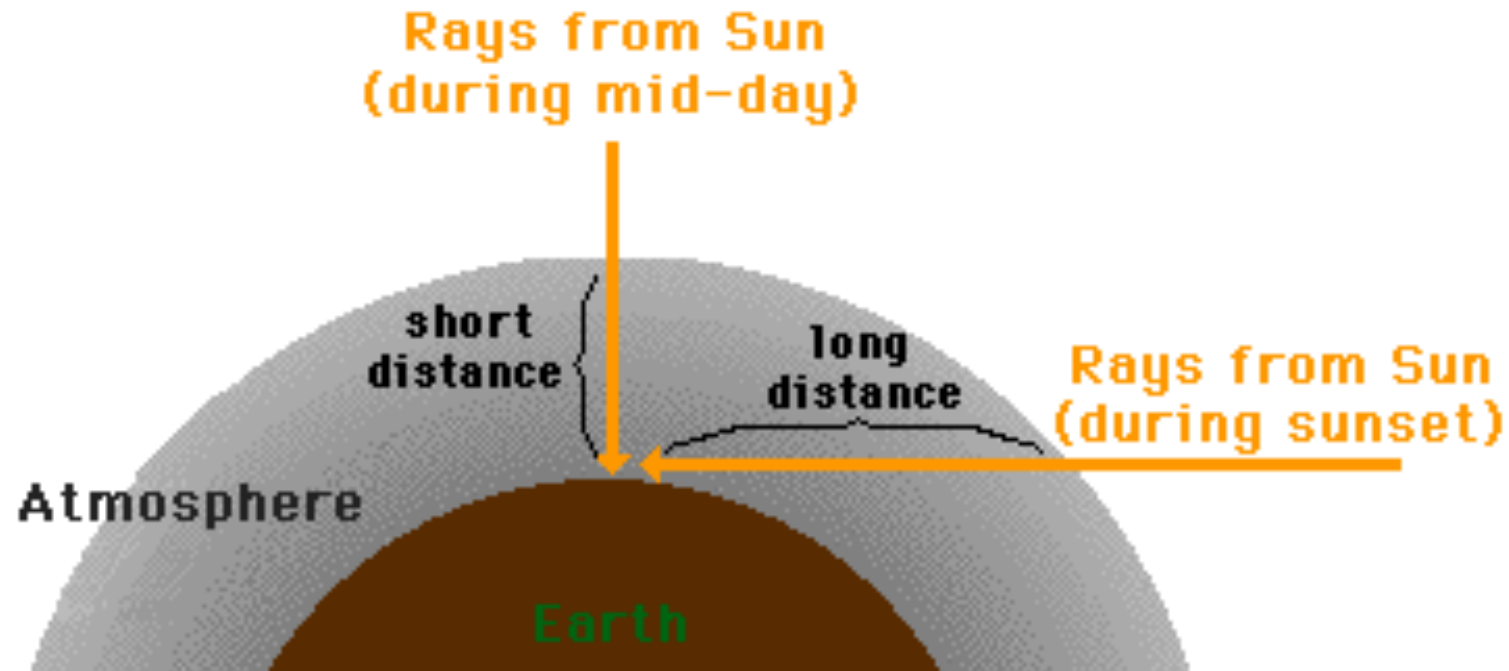
Morning/evening



1. Types of Lighting

At different times of the day, the sunlight passing through the Earth's atmosphere scatters and bounces light on to a subject/object:

- At high noon, the sun has a shorter distance to an object is therefore stronger than
- In the morning or evening when the sun has a longer distance to travel



1. Types of Lighting

On an **overcast** day the sun's light is diffused and therefore spread across the entire sky:

- The light is cooler
- Has a soft tonal appearance
- textures appear more subtle
- smooth surfaces are subdued
- Shadows are muted



1. Types of Lighting

Midday the sun light is at its brightest and it illuminates the subject/object directly and downward:

- There is little chance for light to scatter and diffuse
- Surfaces have more obvious textures
- Shadows are darker and more harsh
- is typically the least desirable type of natural lighting



1. Types of Lighting

Evening and **mid-morning** is a good time to capture images:

- Tones are slightly warmer
- Textures appear more three dimensional
- shadows are more noticeable



1. Types of Lighting

Twilight, dawn and dusk the sun light is passing through the atmosphere giving a calm, peaceful tone to subjects:

- This produces softer, multi-coloured tones
- textures appear darker albeit more subtle
- Shadows are muted



1. Types of Lighting

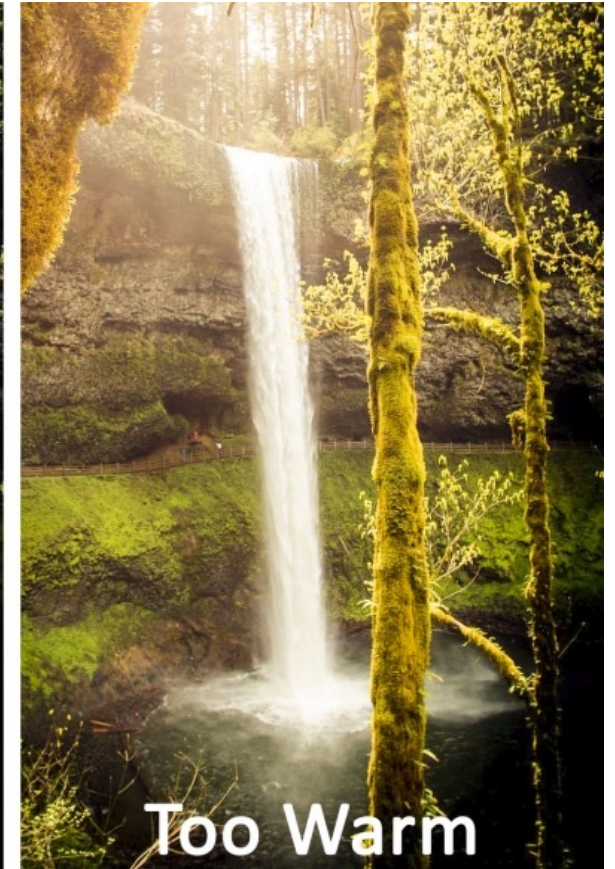
The golden hour is the most desirable light for photography:

- A half hour before/after sunset/sunrise
- Casts ample light on subjects
- Tones are warm and multi-coloured
- Textures are subtle
- shadows are long and soft



1. Types of Lighting

You can always correct colours in postproduction but it's best to get it right from the start:

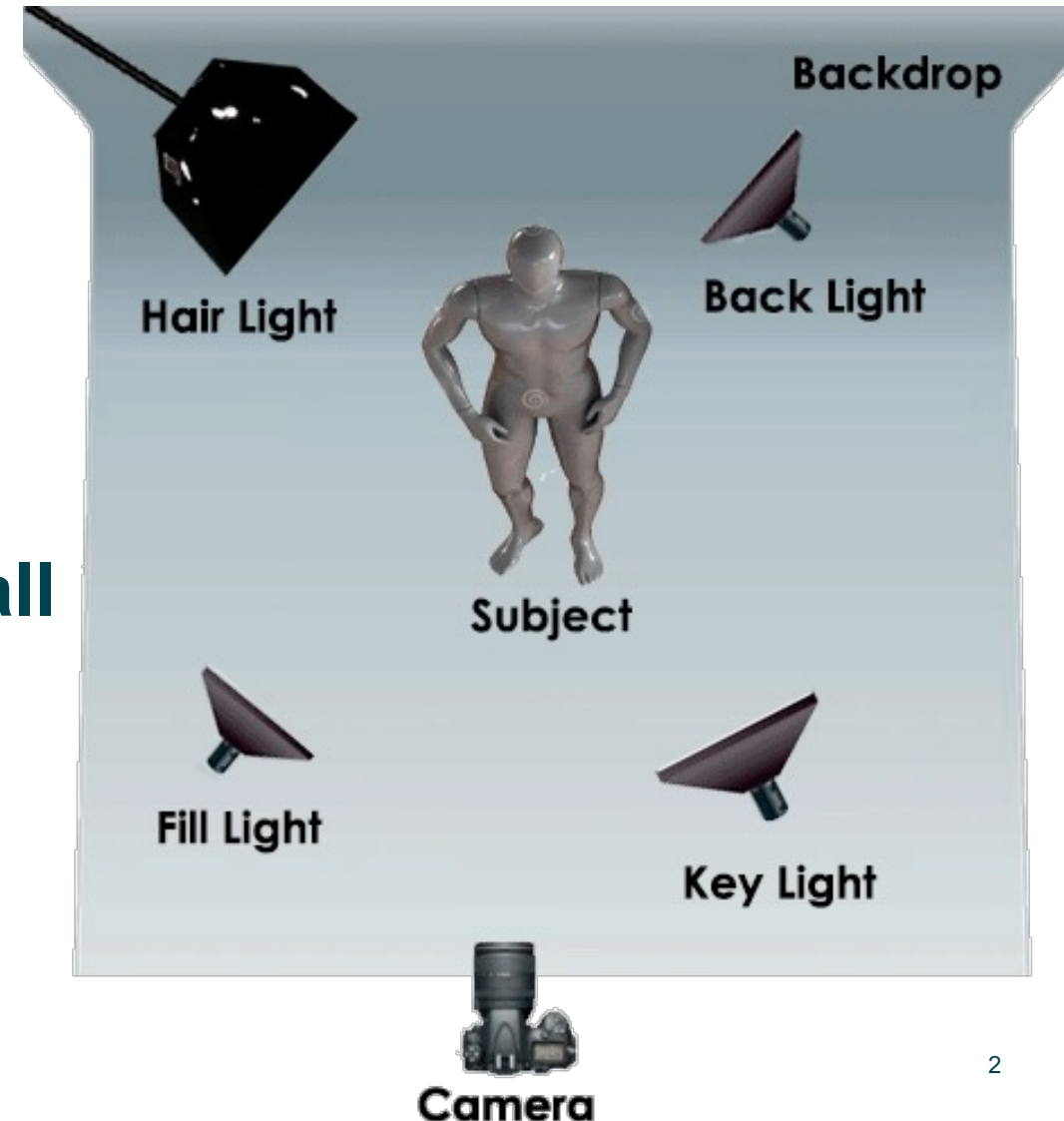




2. Three Point Lighting

Three Point Lighting Technique is a standard method used in all visual media including video production, film, still photography and computer-generated imagery.

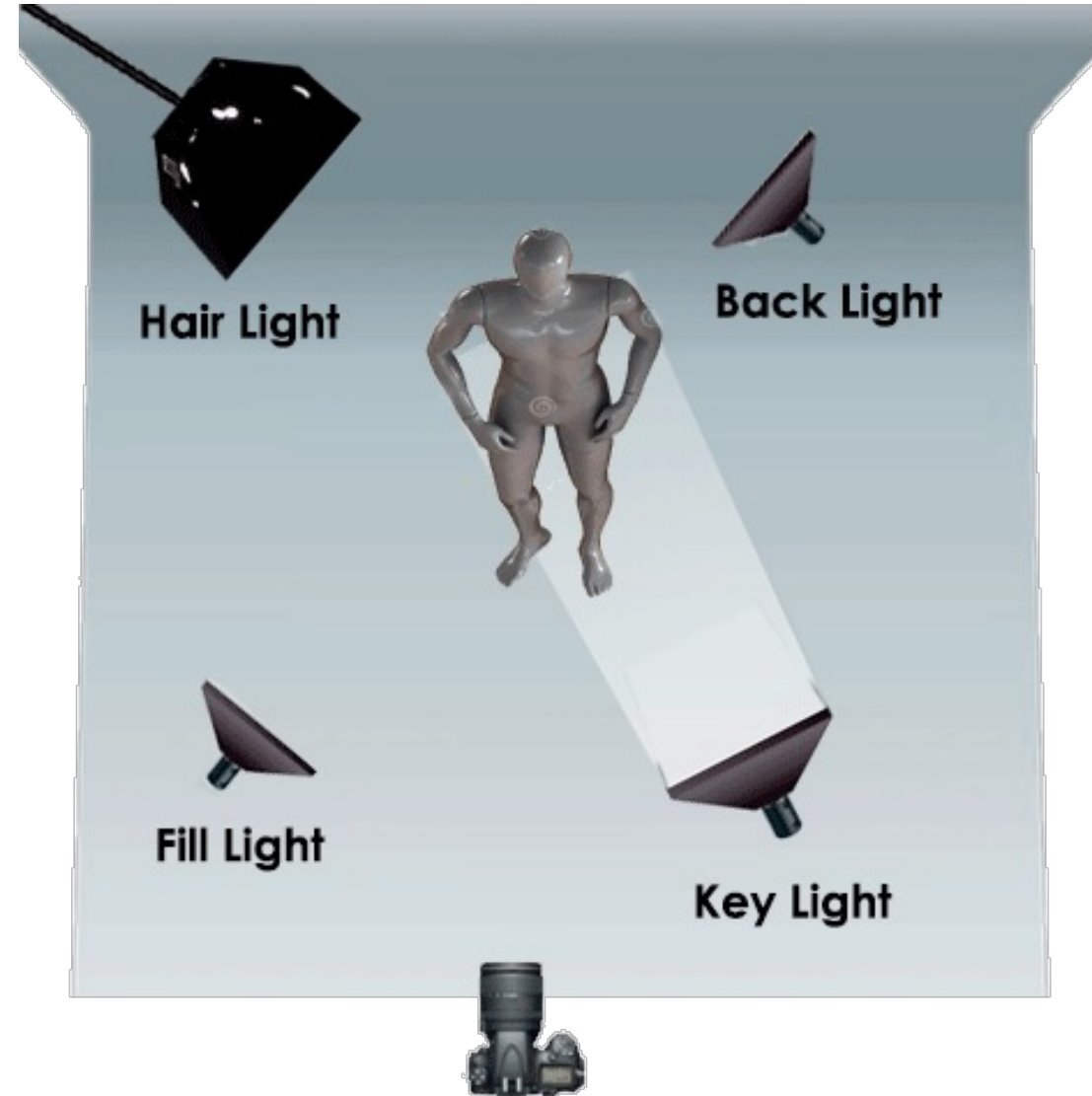
- It's the starting point to understanding **all** lighting
- It's a simple technique which using 3 individual lights



2. Three Point Lighting

The **Key Light** is the main light and usually the brightest.

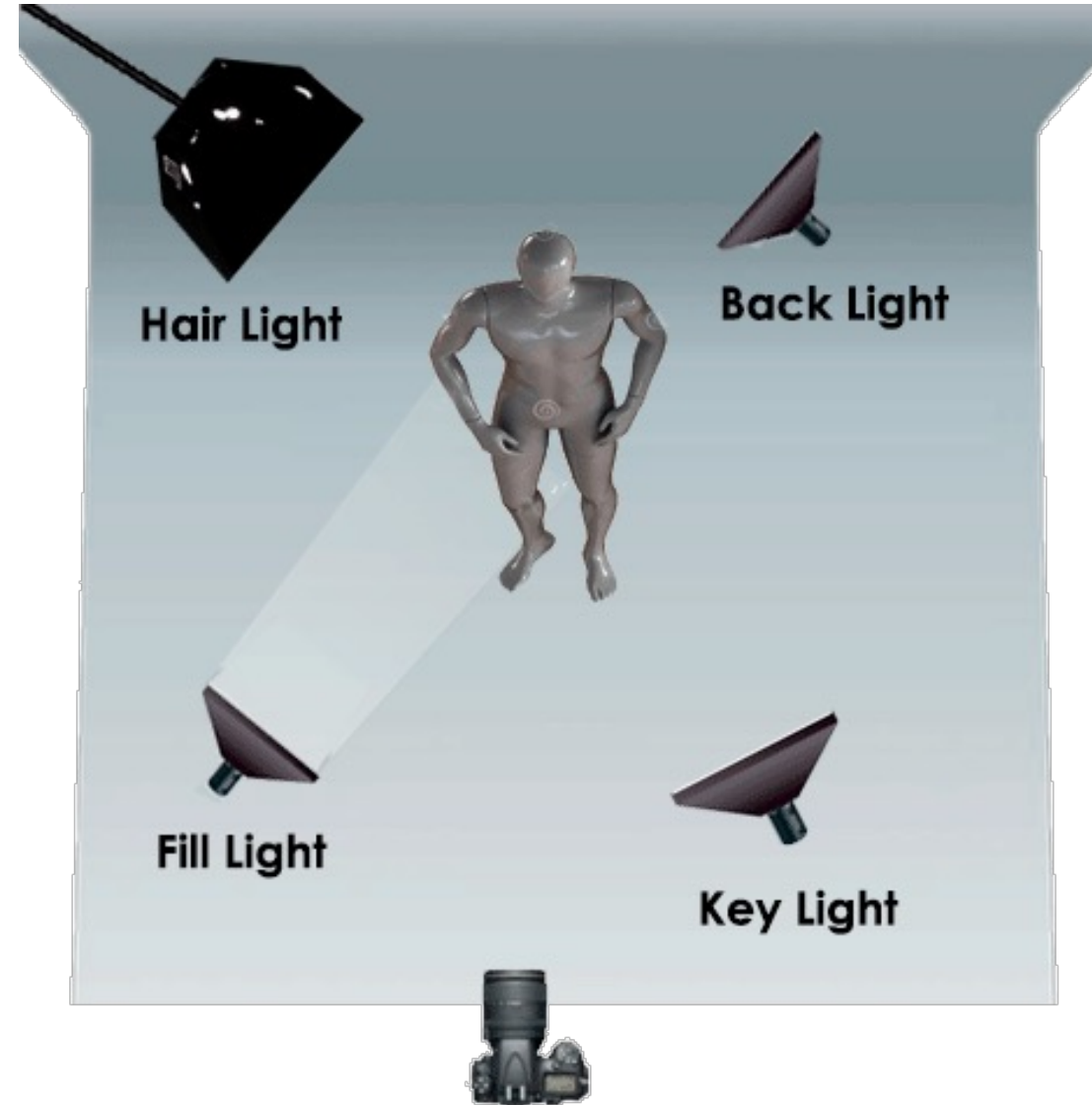
- It should be adequate to light a subject
- Positioned beside the camera
- at the same height as the subject



2. Three Point Lighting

The **Fill Light** is used to reduce the shadows caused by the key light

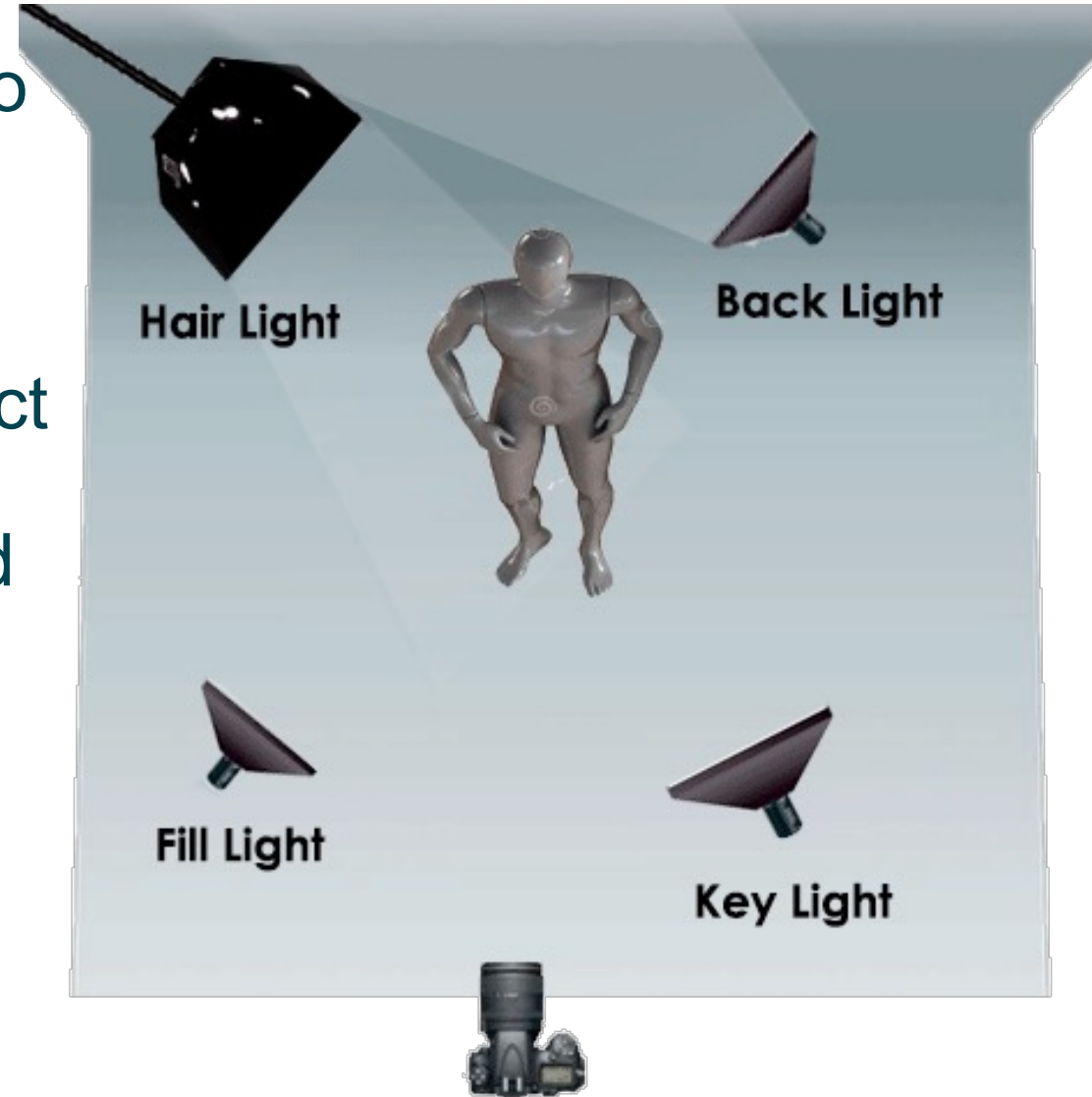
- Not as bright as the **Key Light**
- Positioned on the other side of the camera
- Opposite the **Key Light**
- at the same height as your subject



2. Three Point Lighting

The **Back Light** or **Hair Light** is used to separate your subject from the background:

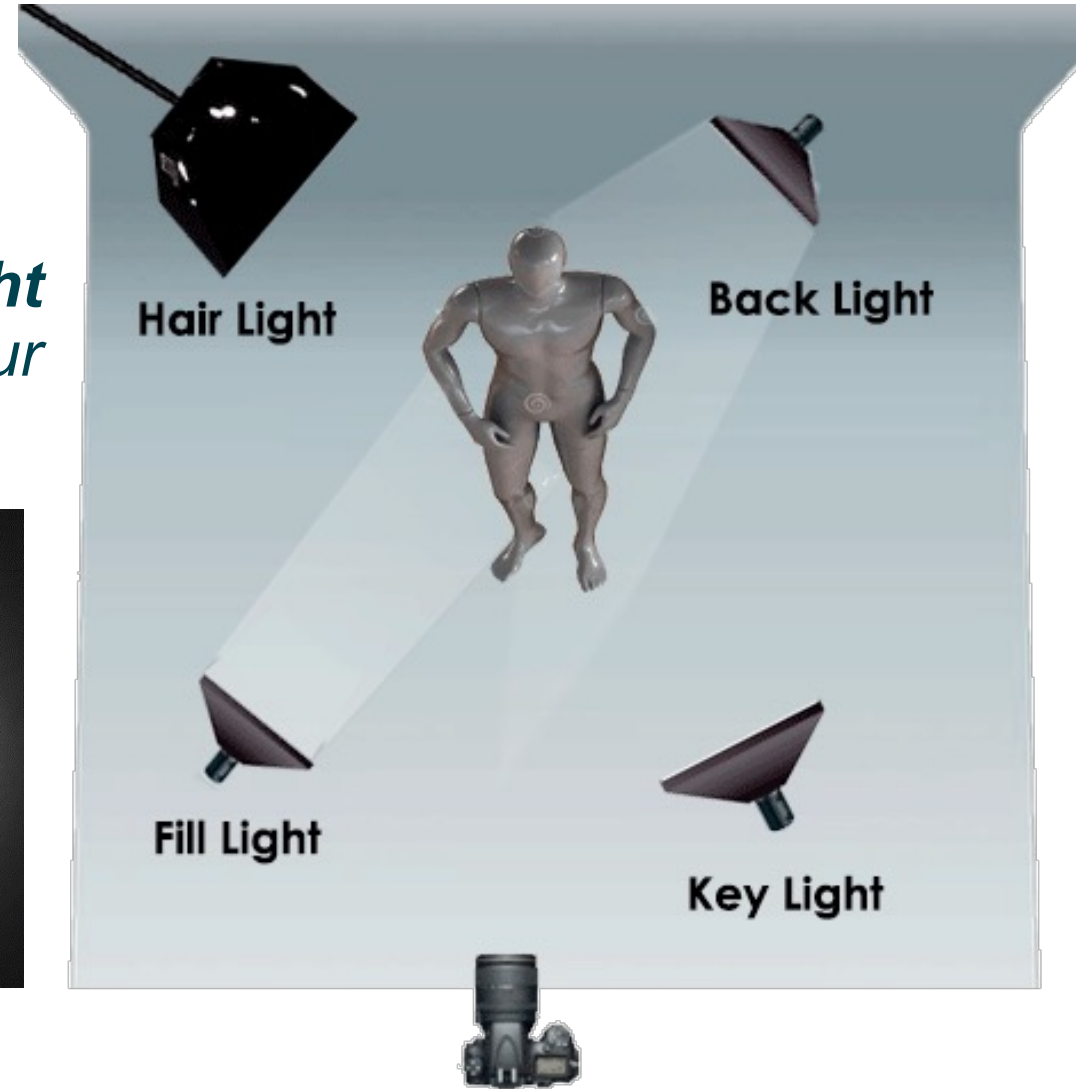
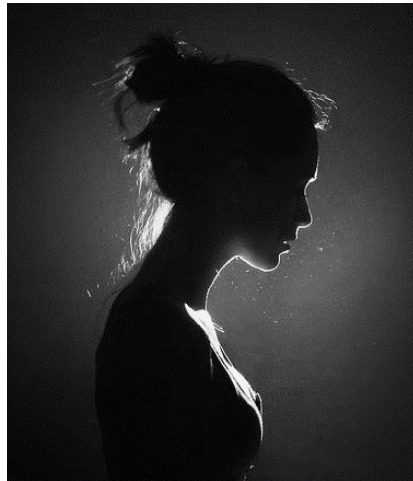
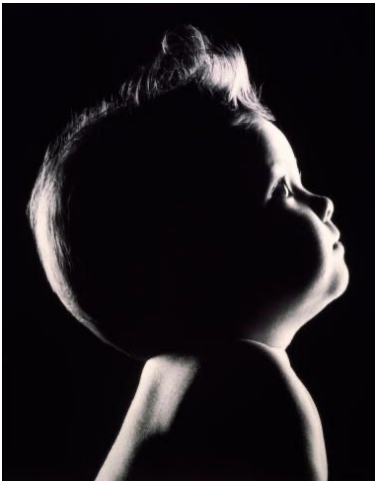
- Positioned behind or above the subject
- Either directly or offset
- It should give a faint glow on the head and shoulders of your subject



2. Three Point Lighting

The Back Light or Hair Light

Note* By adjust the angle of **Hair light /Back light** you can create a better separation between your subject and the background.



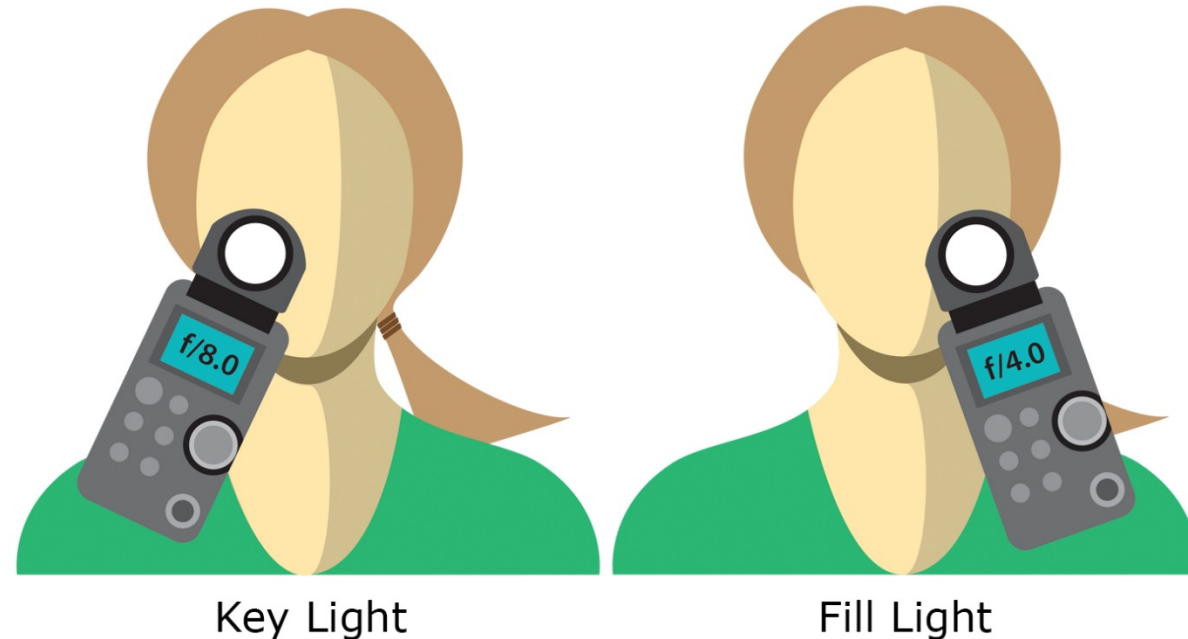
2. Three Point Lighting

By using **Three Point Lighting** we can experiment with the **Five basic lighting Ratios**:

- This helps in determining how much overall contrast there will be in your image
- It's the difference of intensity of light on your subject between your **Fill light** and your **Main light**
- Let's look the **1:1** to **8:1** lighting ratios

Why is this important to know?

The higher the lighting ratio the thinner the subject's face will appear.



2. Three Point Lighting

1:1 is when the **Key light** and the **Fill light** are of equal brightness:

- Shadows are muted
- Highlights are exaggerated
- Textures are flattened
- Works best on a light or grey background



2. Three Point Lighting

2:1 is the lowest lighting ratio:

- Shadows are more subtle
- Gives minimal roundness to the face
- Works best on a light background



2. Three Point Lighting

3:1 is great for normal portraits:

- Shadows are darker
- Gives good roundness to the face
- Contours are more defined
- Works on both a light or dark background



2. Three Point Lighting

4:1 is used for giving a slimming effect:

- Shadows are darker and on one side of the face side
- highlights accent contours with a slight glow
- Works best on a dark or grey background



2. Three Point Lighting

5:1 is used for conveying a dramatic effect:

- Shadows are very dark and on one side of the face side
- highlights accent contours with a more obvious glow
- Works best on a dark background



2. Three Point Lighting

For more dramatic effects, you can also look at **8:1** and **32:1 lighting ratios**

But for beginners, the actual ratio between the **Key Light** and the **Fill light** is not so important as long as:

- You have adequate shadows and highlights
- You've separated your subject from the background...





3. Basic Portraiture Lighting

The **Basic portrait lighting** setups that are fundamental when determining how much overall contrast there will be in a portrait.

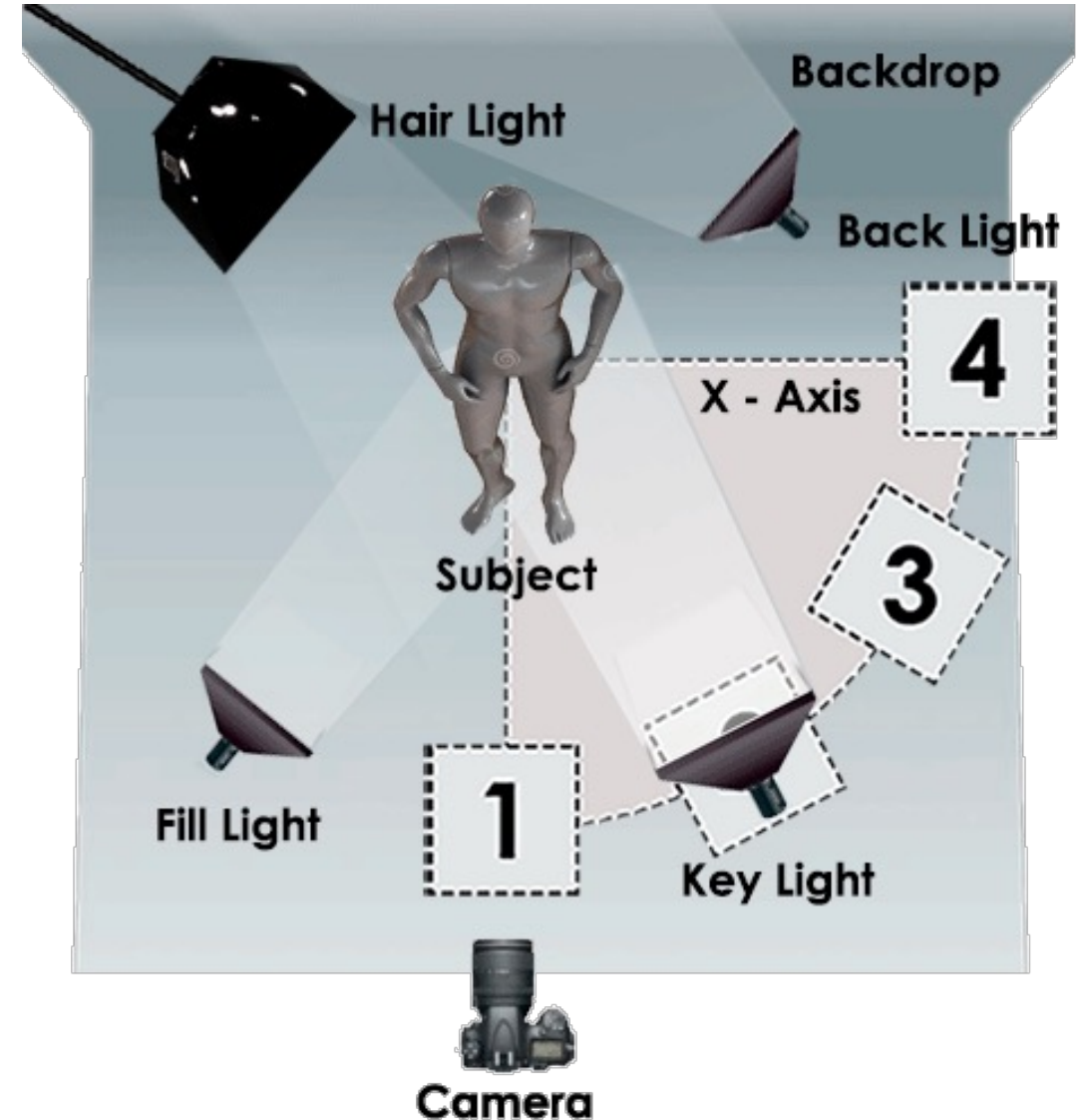
Each lighting setup is characterised by these aspects:

1. the position of the **Key light** on an **X-Axis**
2. the **height** of the **Key light** in relation to your **subject**
3. the direction your **subject** is facing

3. Basic Portraiture Lighting

Portraiture lighting positioning set up:

- **X-Axis** positions 1 - 4
- **Key Light** the brightest on the **X-axis**
- **Fill Light** softer than the **Key Light**
- **Camera** 1-2 meters in front of the **Subject**
- **Backdrop** 1-2 meters behind the **Subject**
- **Back Light** illuminating the **Backdrop**
- **Hair Light** above the subject



3. Basic Portraiture Lighting

Flat Lighting

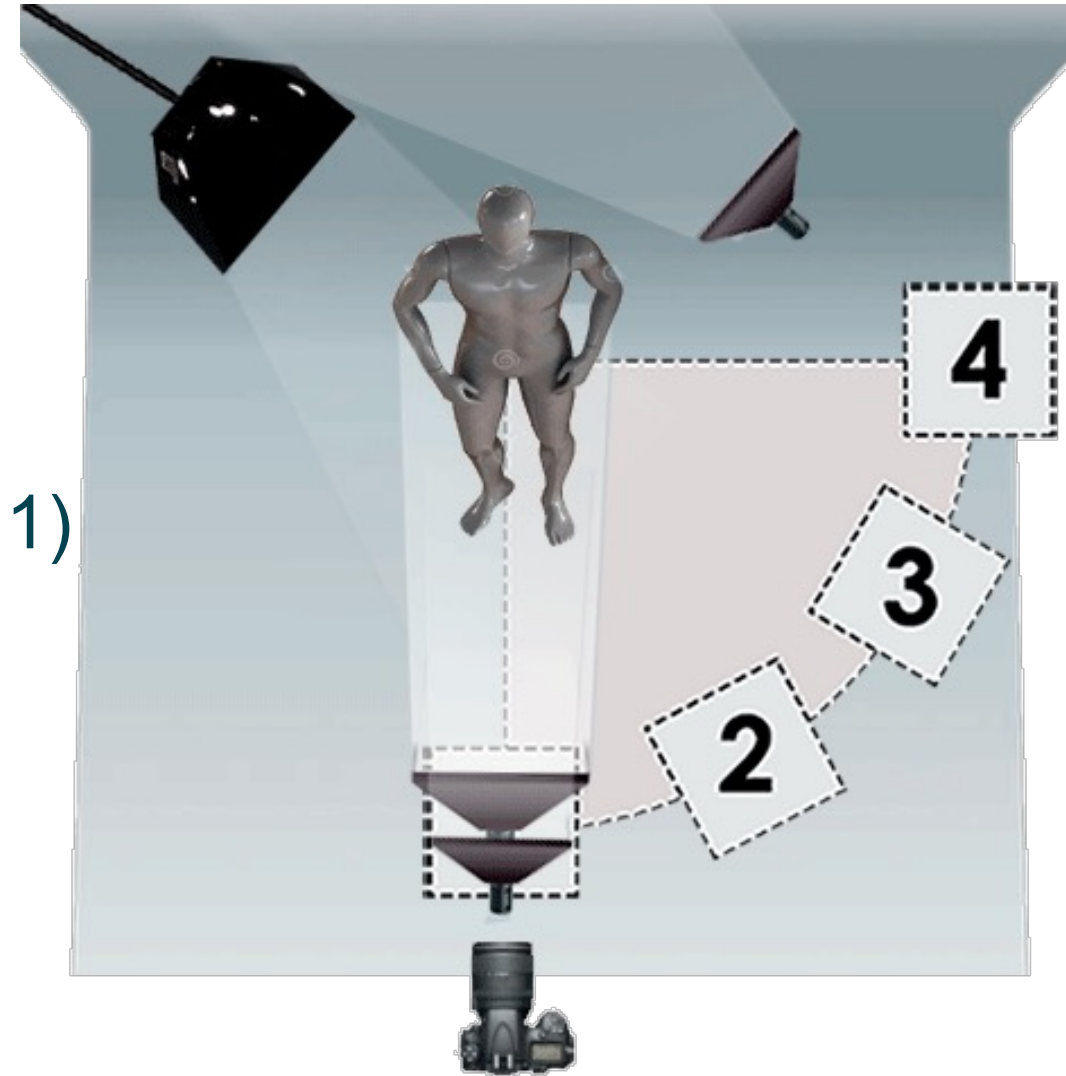
- Like that of a camera/phone flash
- No Shadows or contours
- very flat lighting effect
- used in passport photos etc



3. Basic Portraiture Lighting

Flat Lighting set up

- **Subject** facing the **Camera** (pos 1)
- **Camera** eye level with **Subject**
- **Key Light** slightly above **Camera** (pos 1)
- **Fill Light** above the **Key Light** (pos 1)
- **Hair / Back Light** normal



3. Basic Portraiture Lighting

Paramount/ Glamour lighting

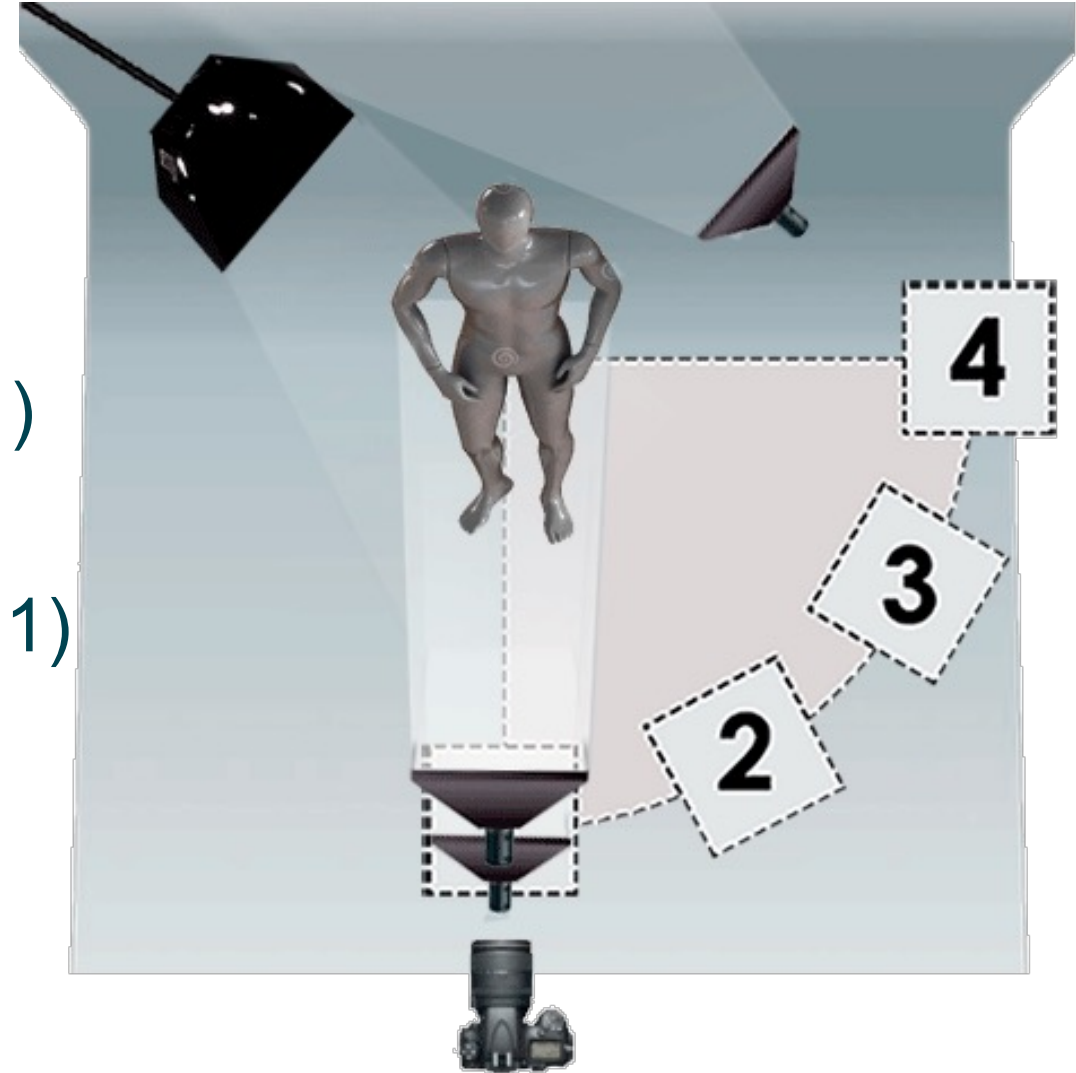
- used in fashion magazines /old cinema
- traditionally a feminine lighting pattern
- emphasizes cheekbones and skin tone
- produces a symmetrical, butterfly-like shadow beneath the subject's nose



3. Basic Portraiture Lighting

Paramount lighting set up

- **Subject** facing the **Camera** (pos 1)
- **Camera** eye level with **Subject** (pos 1)
- **Key Light** above the **Subject** (pos 1)
- **Fill Light** eye level with **Subject** (pos 1)
- **Hair / Back Light** normal



3. Basic Portraiture Lighting

Loop lighting

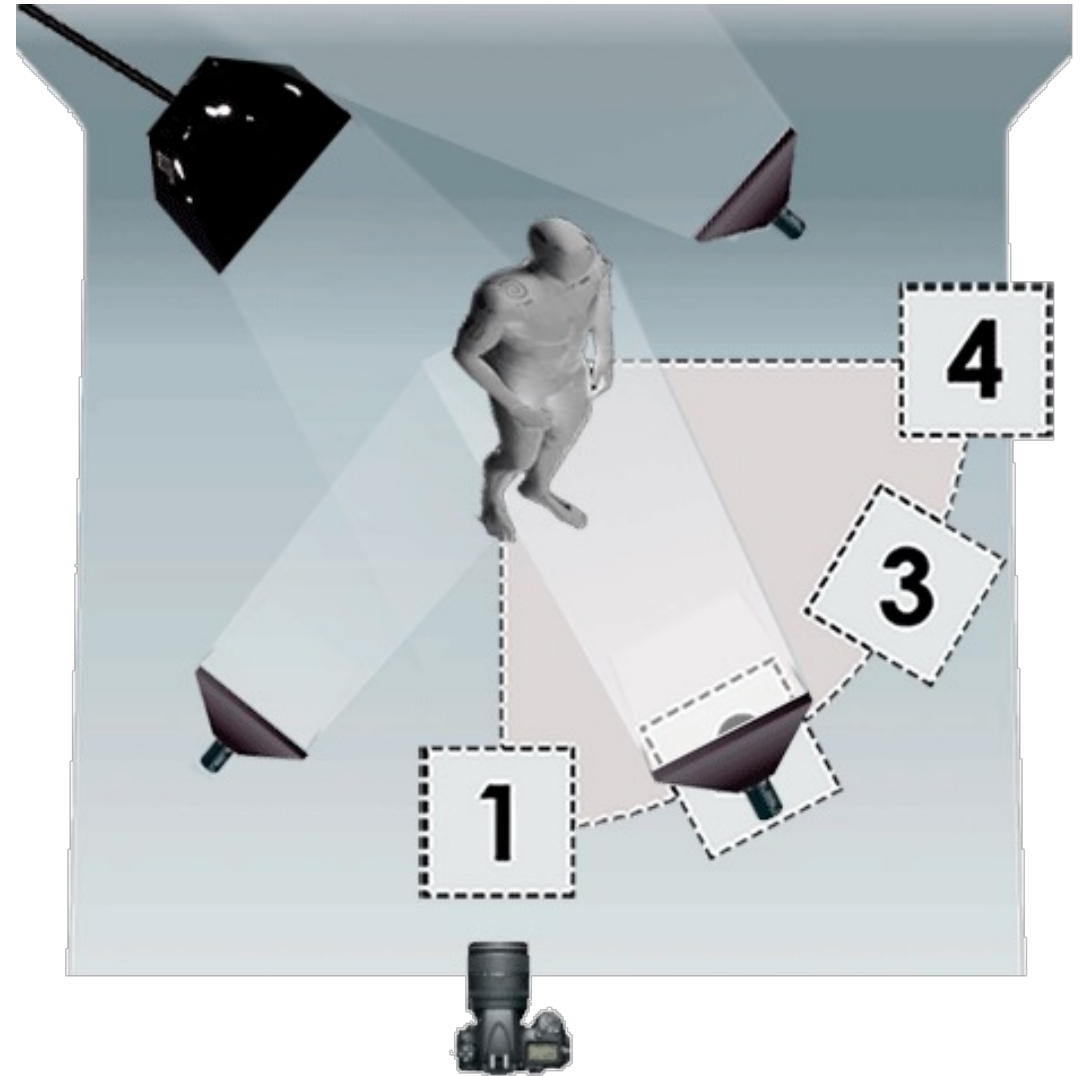
- ideal for people with average, oval-shaped faces
- Produces a shadow under the nose
- creates a small loop on the shadow side of the face
- one of the more commonly used lighting setups



3. Basic Portraiture Lighting

Loop lighting set up

- **Subject** facing between (pos 2)
- **Camera** eye level (pos 1)
- **Key Light** eye level (pos 2)
- **Fill Light** opposite the **Key Light**
- **Hair / Back Light** normal



3. Basic Portraiture Lighting

Rembrandt / 45-degree lighting

- Is also a form of Loop Lighting
- Used dramatic lighting
- characterized by a small, triangular shadowed from the nose
- highlighting cheek bone structure

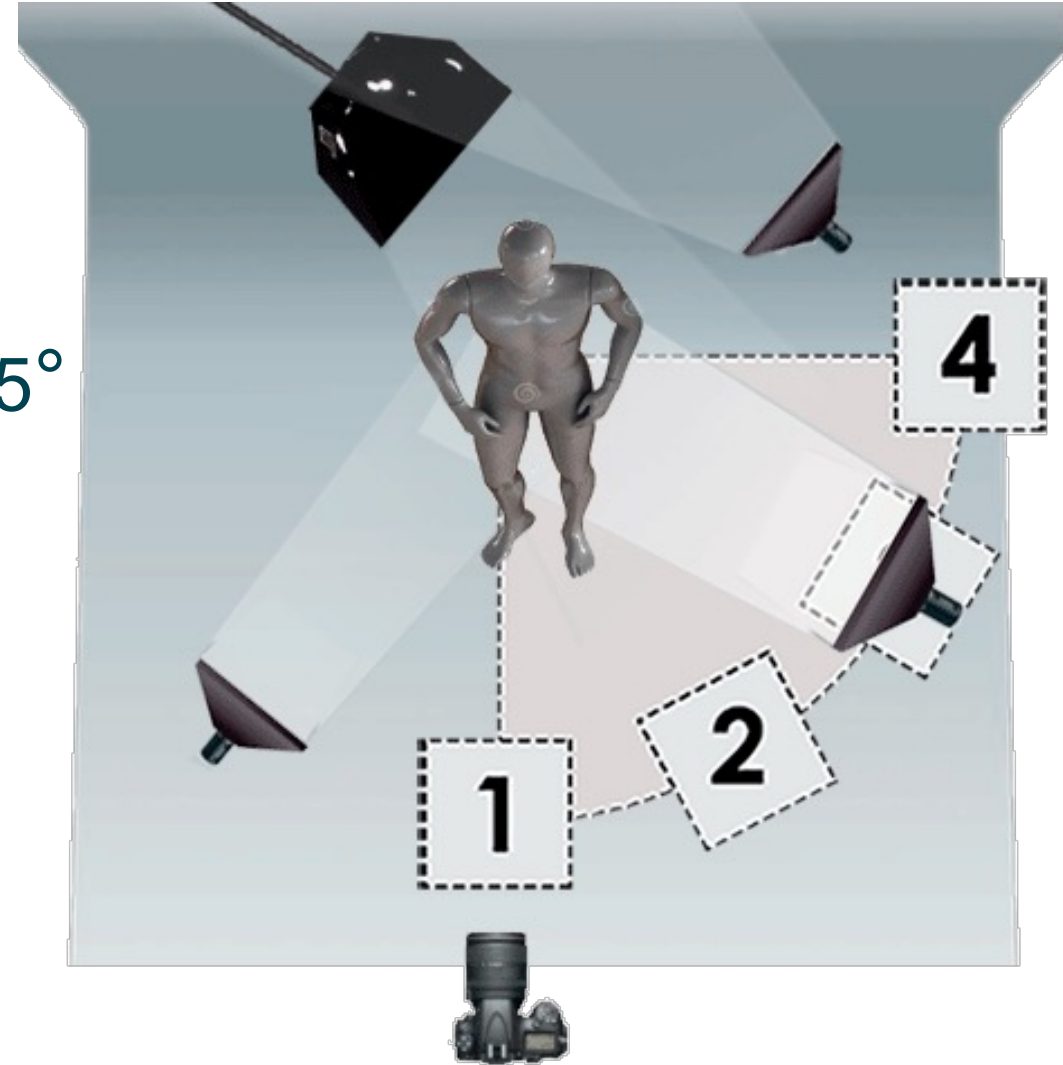
*It takes its name from the **Dutch painter** who used skylights...*



3. Basic Portraiture Lighting

Rembrandt lighting set up

- **Subject** facing the **Camera** (pos 1)
- **Camera** eye level (pos 1)
- **Key Light** above the **Subject** (pos 3) 45°
- **Fill Light** opposite the **Key Light**
- **Hair Light** closer to the top of the head
- **Back Light** normal



3. Basic Portraiture Lighting

Broad Lighting

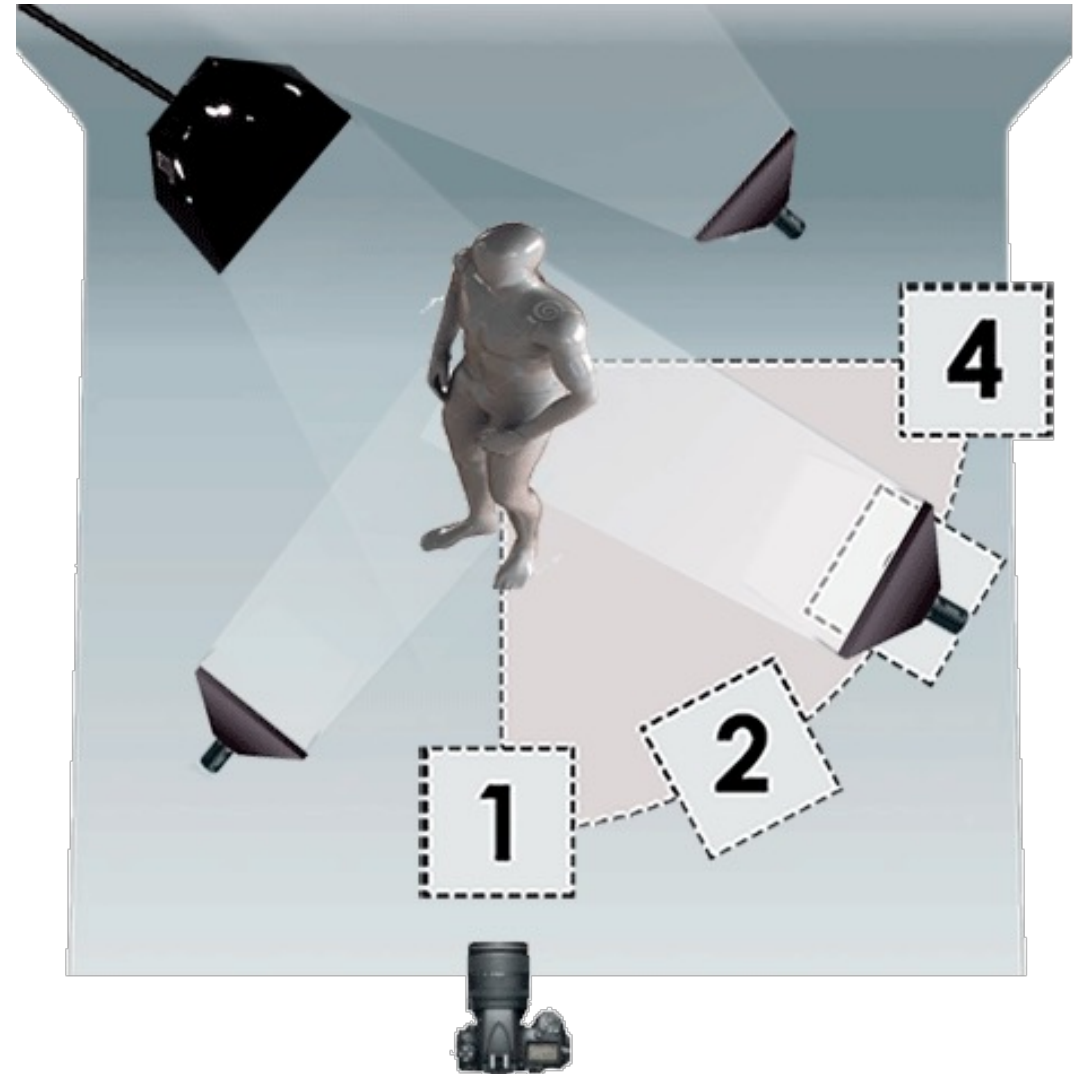
- Used to make wide faces look thinner
- Subject facing away from the **Key light**
- Shadowed side to the rear of the face
- also used if a subject has a facial defect



3. Basic Portraiture Lighting

Broad Lighting set up

- **Subject** facing the **Fill Light**
- **Camera** eye level (pos 1)
- **Key Light** shoulder height (pos 3)
- **Fill Light** lower intensity (5:1 ratio)
- **Hair / Back Light** normal



4. Basic Portraiture Lighting

Short Lighting

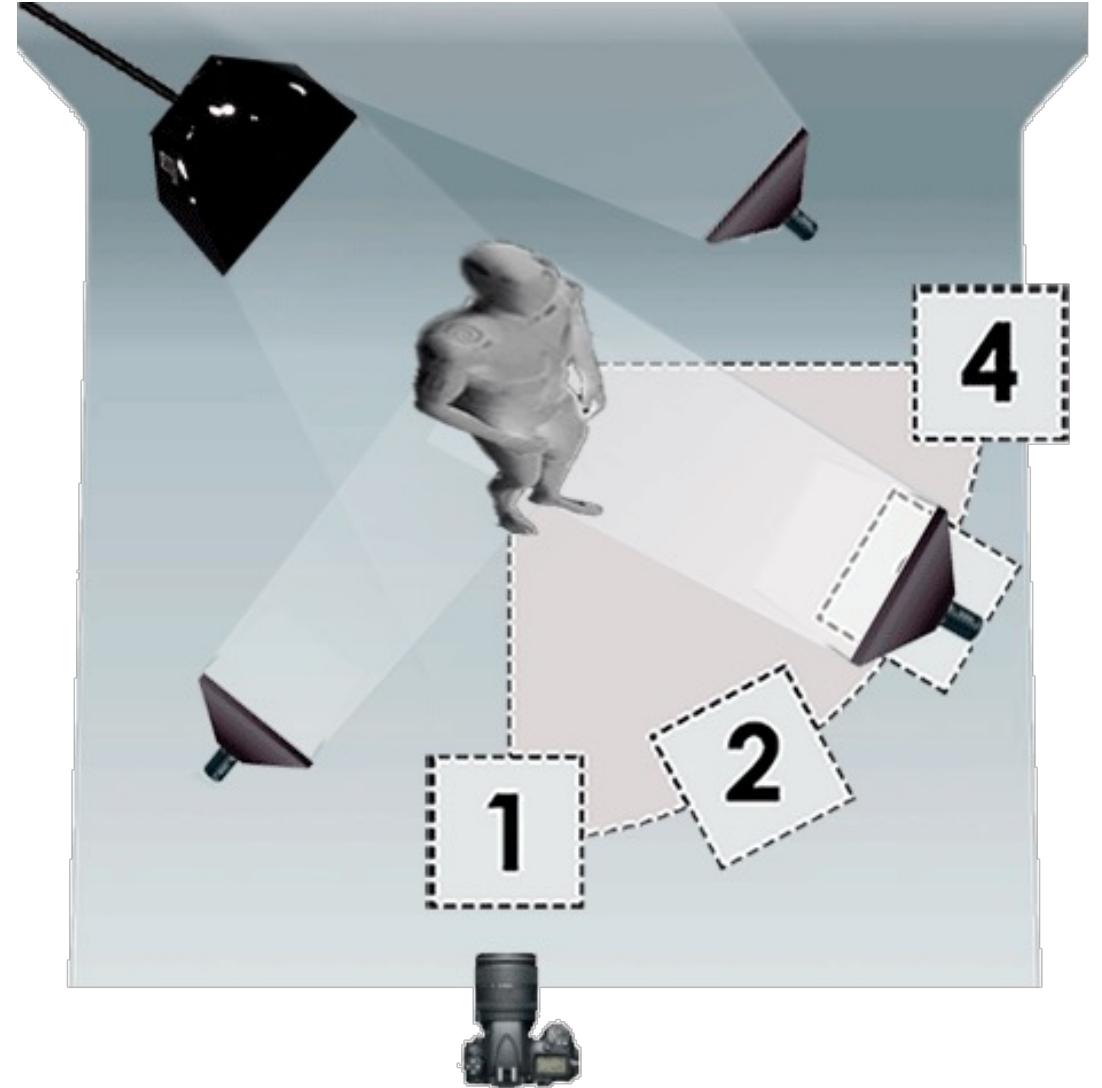
- used to make thin faces look wider
- subject facing towards the **key light**
- shadowed side closest to the camera



3. Basic Portraiture Lighting

Short Lighting set up

- **Subject** facing (pos 3)
- **Camera** eye level (pos 1)
- **Key Light** eye level (pos 3)
- **Fill Light** is normal
- **Hair / Back Light** is normal



3. Basic Portraiture Lighting

Split lighting

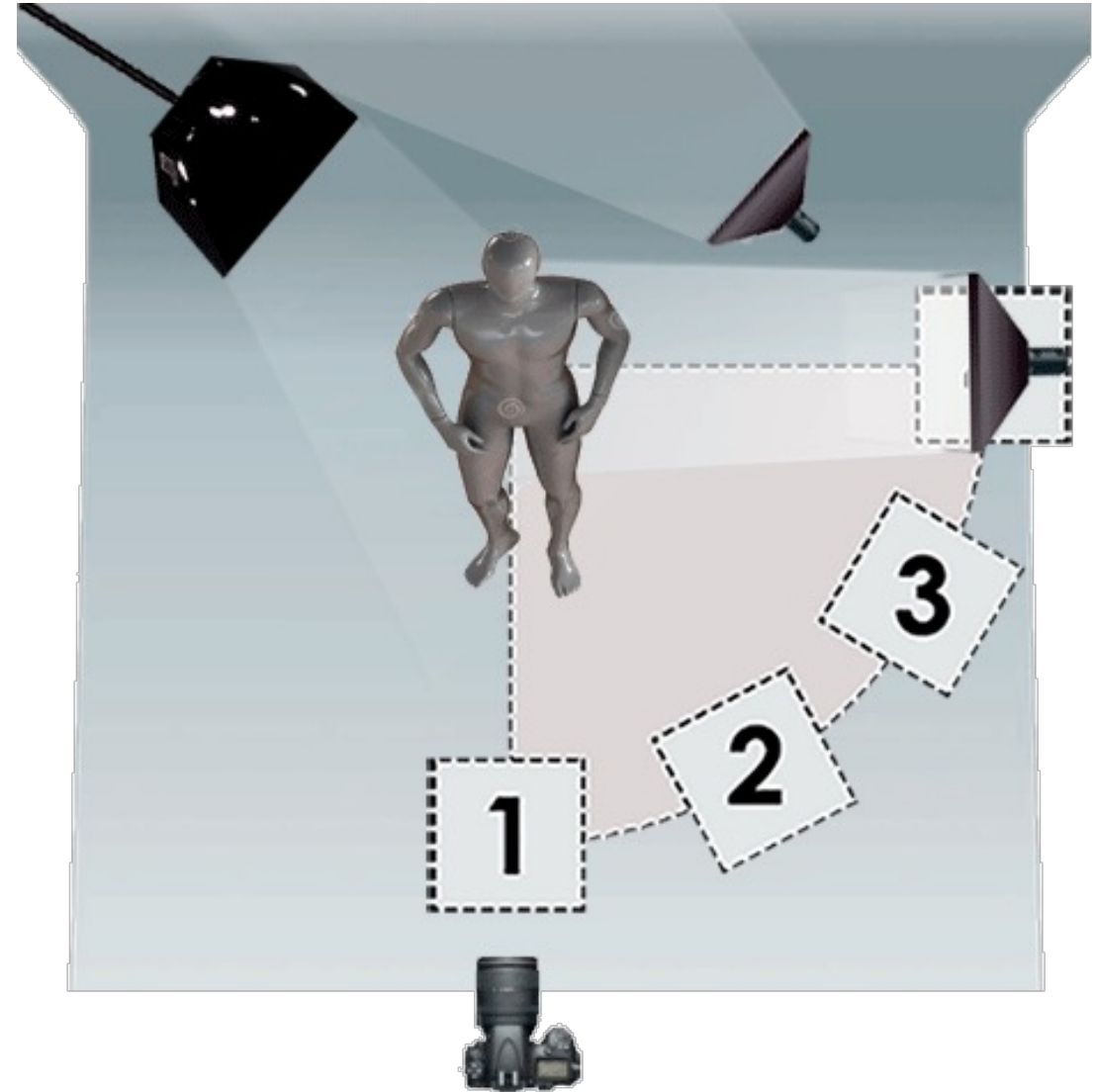
- used to give a highly dramatic effect
- the key light illuminates only half the face
- Also used to narrow a wider face
- can be achieved without the fill light



3. Basic Portraiture Lighting

Split lighting set up

- **Subject** facing **Camera** (Pos 1)
- **Camera** eye level (pos 1)
- **Key Light** Shoulder Height (pos 4)
- **Fill Light** off
- **Hair / Back Light** is normal



3. Basic Portraiture Lighting

Under Lighting

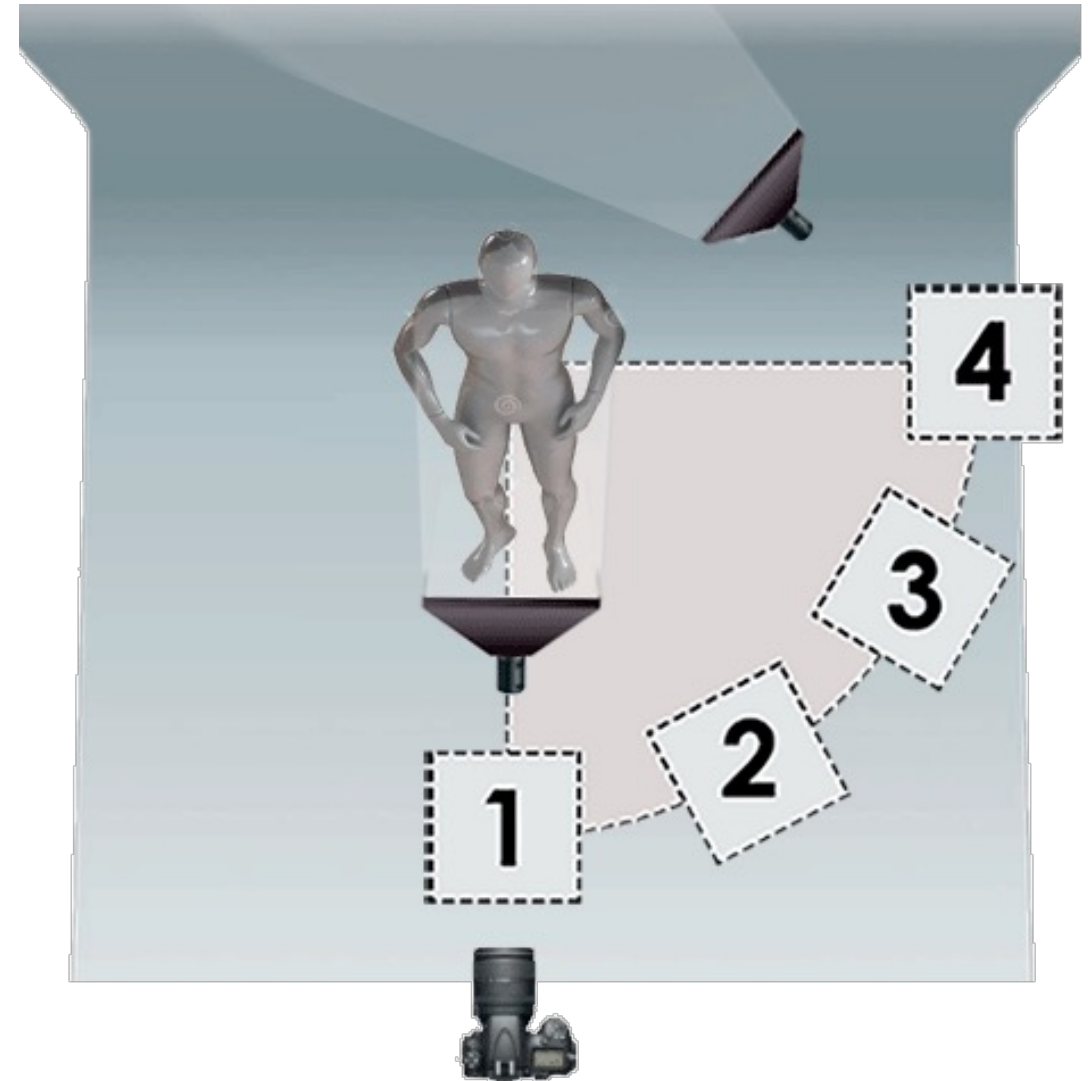
- Used in horror films
- Gives subjects that monster look..

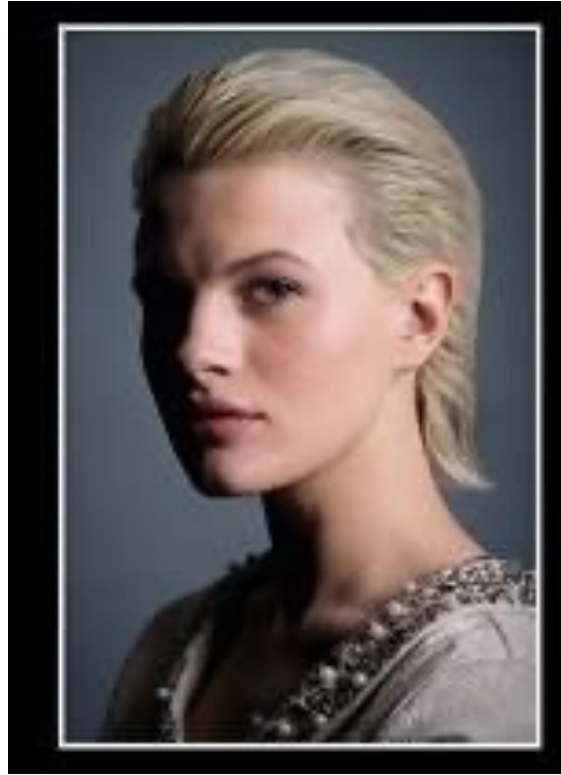


3. Basic Portraiture Lighting

Under Lighting set up

- **Subject** facing **Camera** (Pos 1)
- **Key Light** directly below **Subject**
- **Fill Light** off
- **Back Light** low illuminating upwards
- **Hair Light** off





Lighting Techniques

Summary

1. **Types of Lighting** – Natural and Artificial, Diffused and Direct
2. **Three Point Lighting** – Key, Fill and Back (Hair) Light
3. **Basic Portraiture** – Straight-On, Paramount, Loop, Rembrandt, Broad, Short, Split and Under Lighting

Independant Practice

Take a series of photos and create a **slide show** presentation with 10 slides:

- 5 examples of **Natural Lighting** (Direct and Diffused)
- 5 examples of **Artificial Lighting** using the **Five basic portrait lighting setups**
- Please label your slides accordingly
- Can be of an interesting object or a subject (person)
- Have fun!

Reflection

Use 5 - 10 minutes to review the **Subject** of today's lecture:

List the **Topics**:

- What do they mean to you?
- Which **Topic** was the most interesting and why?
- How can you begin to start working this knowledge?
- What new questions have arise?
- What are you still wondering about?

Resources

Liturature

- D, Bordwell. K, Thompson. *Film Art, An Introduction* – Pp 121-134

Tutorials

- 8 Types Of Natural
- The Exposure Triangle
- Five Basic Portrait Lighting