
UNIT 12 LIGHTING

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12.0 INTRODUCTION

Without light this whole world would be dark. Neither we nor the camera can see this world without it. Whether it is photography or video production or filmmaking, nothing is possible without light. Light is extremely important for all of them. You must have often heard three words in the context of video or film production - light, camera and action. Here too, the light comes first because the camera cannot record action without the light. The word photography simply means drawing with light. Earlier, film was used in still cameras. The film was a light sensitive strip on which light signals were recorded. Similar films were also used in motion picture. Later, instead of film, image sensors came in place, but these image sensors also record only light signals and then convert these light signals into electronic signals. Therefore, in photography, film making and video production, everywhere cameras record the light signals only. In addition to illuminating the objects

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of the frame, light also plays many other roles. It is an important tool for visual storytelling.

Using light in a planned manner to produce the desired effects is called lighting. Lighting the same subject in different ways can produce different meanings and effects. In this unit, we shall discuss different aspects of lighting in the context of photography and television production. Light is an important subject in science, but here we will limit our discussion only to the use of light as a key element in photography and television production.

12.1 LEARNING OUTCOMES

After going through this unit, you will be able to:

- discuss the importance of lighting in photography and television production;
- explain the different characteristics of light;
- describe the different lighting techniques; and
- discuss the various lighting instruments and accessories.

12.2 LIGHT AND LIGHTING

Light is a natural agent (electromagnetic wave) that stimulates sight and makes things visible.

It is a portion in the electromagnetic spectrum that is visible to human eye. Its wavelengths range from around 380 to 750 nanometres (Figure - 1). It lies between the infrared and ultra violet range of the spectrum. Lighting on the other hand is the planned and calculated use of light to capture visuals with desired effect (level of illumination or shadow).

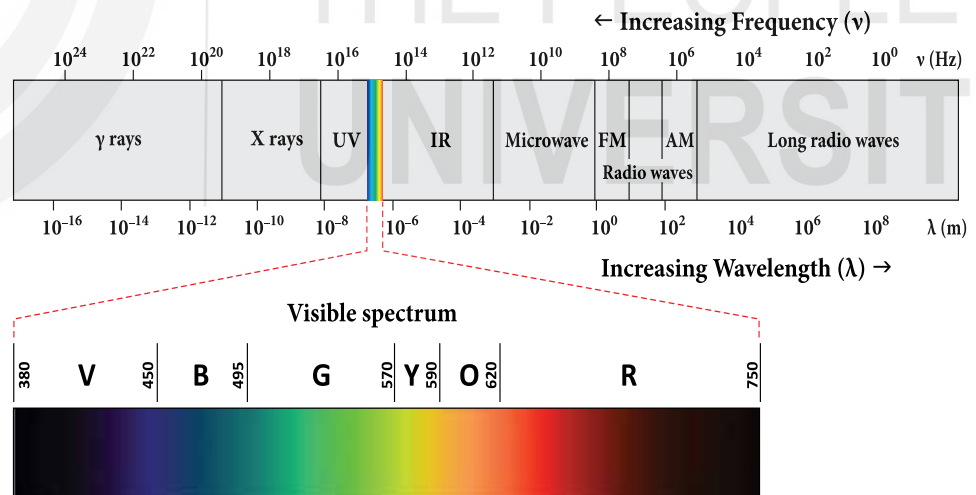


Image Source: Philip Ronan, Gringer / CC BY-SA (<https://creativecommons.org/licenses/by-sa/3.0>), https://upload.wikimedia.org/wikipedia/commons/3/30/EM_spectrumrevised.png

Figure 1: Electromagnetic spectrum

12.2.1 Importance of Lighting

As we have discussed earlier, we cannot even imagine the existence of photography, videography or cinematography without light. It is the backbone of photography or television production. As a photographer or

television professional, we use planned and calculated light so that we can get the desired results. This is called lighting. In photography or television production the importance of lighting can be classified into two following types:

1. Meeting the technical requirement of the cameras
 2. Aesthetic requirements
1. *Meeting the technical requirement of the cameras:* Just like our eyes cannot see without light, similarly the camera also does not see anything without light. Therefore, it is necessary that there is sufficient light in order for the camera to record visuals. Every camera needs a minimum light to work optimally. Therefore, the first objective of lighting is to provide the appropriate light for the camera so that it can record the visuals correctly.
 2. *Aesthetic requirements:* Lighting is an important tool for visual storytelling. It creates meaning. With the help of lighting, we can set the mood of a scene, highlight certain things in the frame, likewise hide certain things or reduce their importance in the composition, and can present the personality of a character in a particular way. If your scene is positive and cheerful, you have to light it in a certain way, but if the scene is full of sadness, you will light it differently. Lighting also plays an important role in making scenes scary. Lighting the same room in different ways can produce different meanings. If your lighting does not suit the mood of the scene, it will create confusion in the audience's mind and you will not be able to tell your story in a smooth and effective manner.

12.3 CHARACTERISTICS OF LIGHT

Light has some characteristics that are frequently used in photography or television/film production. As a student of electronic media, you should understand these characteristics. In this section, we shall discuss these characteristics in detail.

12.3.1 Light Intensity or Quantity

In simple words, light intensity is the available amount of light on a given surface. It refers to the quantity of the light. In photography or television production, it is very important to know how much light is falling on subject/s. A minimum light intensity is required for any camera to be able to record optimally. If that minimum amount of light is not available, camera will not function properly. The technology of cameras is constantly improving. Newer modern cameras are doing better at relatively low light intensity than older cameras. This has also benefited artists working in television. Earlier, in order to meet the technical requirement of the camera, a lot of light intensity was required, due to which TV actors or presenters had to face lights with high intensity. These lights used to produce a lot of heat also. But now the technology of camera has improved significantly.

Professionals use light meters to measure the light intensity accurately. The unit of light intensity is Lux (lx) and Footcandle (fc). The light intensity can be measured for the two following different types of lights :

i. Incident Light

ii. Reflected Light

i. *Incident Light:* The incident light is the light that falls directly on the subject. It is different from the reflected light. The intensity of incident light depends upon the brightness of the light source. This light can be easily measured by standing next to the subject by using a light meter pointing it towards the camera lens. This reading of light metre provides us an accurate measurement of the overall light amount that reaches a specific area.

ii. *Reflected Light:* As the name itself suggests, it is the light reaching the camera lens, reflected from the surface of the subject. The reflected light gives you a perfect idea of how much light is bounced off the various subjects and reaches the camera lens. Generally it is used to measure contrast. The intensity of reflected light depends upon two things. First, brightness of the light source and second nature of the objects' surface. Two different types of surfaces will reflect the same amount of light differently. Suppose you are taking a shot of a drawing room. There is a show piece with shiny surface near the couch. If you are putting equal light over that area, the reading for incident light intensity will come same because both the show piece and the couch receive the same amount of light. But when we measure intensity of reflected light, it will be more for the show piece because the show piece is reflecting more light due to its shiny surface, and camera lenses receive more light reflected from the show piece. Reflected light intensity can also be measured with specialized light meters placed near the camera pointing it closely to the subject. The figure (2) explains the difference between incident light and reflected light.

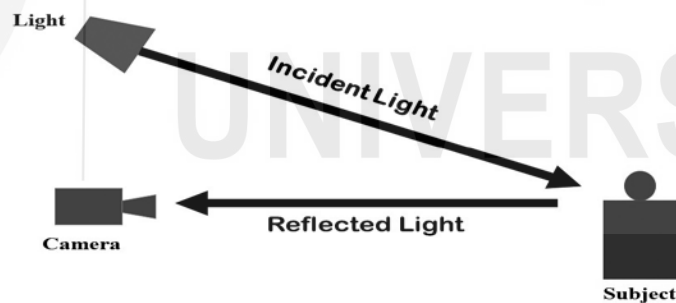


Image Source: Amit Kumar

Figure 2: Incident Light and Reflected Light

Controlling Light

Intensity: In photography or television production, you need to control the light intensity according to your requirement. The light intensity can be controlled in many ways. First, you can change the lamp. Suppose you are working with 300W lamp and you need almost half light intensity. Then you can change the lamp and work with 150W lamp. Second, you can use dimmers also. With the help of dimmer, you can decrease or increase the intensity of the light according to your need. Third, you can change the light intensity by changing the distance between the light source and the illuminated subject. If you bring the light source closer to the subject, the light intensity will increase and vice versa. The camera also has many

controls to manipulate the light intensity. We have already discussed these camera controls in previous block.

12.3.2 Light Character or Quality

The second important characteristic of light is its quality or character. It is basically its hardness or softness. On this basis, light can be divided into two main categories – Hard light and Soft light.

- i. *Hard Light:* The *hard light* casts hard edged and well defined shadows with clear border. Small and distant light sources produce hard light. It means, two factors affect the hardness and softness of light. First is size of the light source relative to the subject, and second, distance between light source and the subject. The relationship can be understood as - smaller the light source, harder the light and farther the light source, harder the light. The shadows of these lights are harsh and create deep contrast pictures. Few common examples of the hard light sources are sun (excluding morning, evening and cloudy day), flashlight, etc. Now a question arises that the sun is very big but still gives hard light, why? It is true that the sun is very large but it is far away, so we see it quite small. The size of the sun relative to us is small. That is why it produces hard light. While hitting a textured surface at an angle, hard light highlights the textures and shows more details in an object.
- ii. *Soft Light:* The *soft light* cast soft edged shadows. Soft lights are diffused and create even distribution of colour tones and fewer shadows resulting in low contrast in the picture. You can find this type of light during cloudy days as the light from the sun gets diffused passing through the clouds. The light then gets evenly distributed avoiding harshness. In artificial lighting, diffusers and papers are used to diffuse the light manually to get the even tone. As we have discussed above, the size of the light source relative to the subject and distance between light source and subject determine the hardness and softness of the light. Here the relationship is – larger the light source, softer the light and closer the light source, softer the light. The following figure (3) explains the difference between hard light and soft light.

**Shadow created
by hard light**



**Shadow created
by soft light**

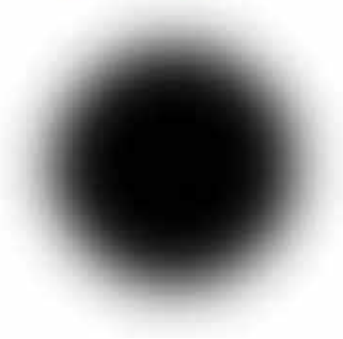


Image Source: Amit Kumar

Figure 3: Shadows created by hard and soft light

12.3.3 Colour Temperature

The third important characteristic of light is colour temperature. When we heat a black body at high temperature, its colour also changes as the temperature increases, from reddish-orange to bluish-white. At different temperatures it radiates different colours, and that temperature is called colour temperature of that particular colour. Colour temperature is the variation of colour tinge of the light sources such as candles, tungsten light bulb, fluorescent tube, midday sun, etc. You should not be confused with the physical temperatures of the light filaments and tubes.

Generally, higher the colour temperature, the bluer it is, and the lower the colour temperature, the redder it is. The colour temperature is measured in degrees Kelvin (K). The standard colour temperature for indoor lighting is 3200 K and for outdoor it goes up to 5600K. As colour temperature increases the light's appearance moves from the colours, red, orange, yellow, white and bluish white consecutively. The Sun is a single light source but it changes its colour at the different times of the day. Here, we shall see colour temperatures of few light sources. For example, candle flame – 1800K, Sunrise/Sunset - 2500K, tungsten halogen – 3200K, early morning or evening sunlight – 3500K, noon sunlight – 5600K, overcast sky – 6500K, etc.

Colours with colour temperatures beyond 5000K are considered as cool colours whereas colours with lower colour temperatures ranging from 2700-3000 K are recognised as warm colours. So, the light sources with lower colour temperature (for example- candle light, tungsten light, etc.), release reddish light, and make colours look more warm. On the other hand, light released from a cloudy sky produces a blueish light, and makes colours look cool. It can create a problem in photography or video recording, because in different colour temperatures the camera will not be able to recognize the true white colour. As a result, it will record wrong colours. To solve this issue, cameras are equipped with white balance settings and controls.

Activity 1

Take any small object (a small showpiece, pen stand, paperweight, etc.) and keep it in a dark room. Brighten it with an electric torch. You can also use your smartphone torch. Observe the shadow created. Now, place a white thin paper in front of the torch and observe the effect on the shadow. After completing this activity, write the use of diffuser to soften the light.

Check Your Progress 1

Note: Use the space given below for your answers.

Compare your answers with those given at the end of the unit.

- How is reflected light different from incident light ?

.....

.....

.....

.....

2. What is soft light ?

.....

3. Camera captures mostly _____ light.

- a. Incident light
- b. Reflected light
- c. None of the above

4. Morning sun has higher colour temperature than noon sun.

- a. True
- b. False

12.4 FUNDAMENTALS OF LIGHTING

After discussing the main characteristics of light, it is now important to understand some of the fundamental concepts used in lighting. In this section, we shall discuss them in detail.

12.4.1 Sources of Light

An object that emits light is called a source of light. In the context of photography and audio-visual production, light sources can be classified into two main categories:

1. Natural Light Source
2. Artificial Light Source

1. **Natural Light Sources:** These light sources are available in nature. The Sun is the main source of natural light. The Moon is also considered a natural light source that provides light at night. However, if we think technically, the Moon does not emit light. It only reflects the sunlight. The Sun is used as the main light source in outdoor photography or television production. You can use different reflectors to reflect sunlight to illuminate different parts of your frame. Sunlight can also be used in indoor shoots. In rooms, you can use windows to get the sunlight. With the help of reflectors you can illuminate different areas of the room with sunlight.

2. **Artificial Light Source:** Artificial light sources are man-made light sources. All types of electric lamps fall under this category. We often use artificial light sources in photography or television production. Artificial lights are mainly used in studios, other indoor shoots or outdoor shoots at night but many times they are used in day time outdoor shoots also. There are many artificial lighting options available and you can choose according to your needs. Earlier, tungsten lights were used which produced a lot of heat but now cooler LED lights are also available. We shall discuss about several artificial light sources in the upcoming section on lighting instruments.

12.4.2 Direction of Light

The direction of light also plays an important role in lighting. Here, *direction* means the relative position of the subject and the source of light. That is, from which direction, from which height, and at what angle is the light falling on the subject. The direction of light determines the effects of lighting. You can understand this effect with a small activity. You should do this activity preferably at night, but if you have a room in your house that you can completely darken in the day, then you can do it in the daytime also. First of all, take a torch. Then along with any member of your family reach the room. Make that family member sit in a chair. Close the door and turn off all the lights there. Now your room will be completely dark. You can then put the torch light on the face of your family member from different directions and see its effects. If possible, these pictures can also be taken with a mobile camera. When you put the light from above, a different kind of glow appears on the face which looks like positive and divine light. But as soon as you change the direction of light and put it on the face from the very bottom, its effect also changes. Now the face starts looking a little scary. Now you can put the light from behind and then from the side and see the effects. After finishing this activity, you can analyse it by looking at the pictures taken from the mobile. This analysis will tell you how changing the direction of light falling on the same object may create different effects.

12.4.3 Lighting Ratio

Generally, the lighting ratio is the ratio between the intensity of the key light and fill light. Suppose you are doing portrait photography and using both key and fill lights. You measured the intensity of your key light near the face of your subject with an incident light meter and it came to 600 lux. Then you also measured the intensity of the fill light and if it came to 300 lux. It means, your key to fill lighting ratio was 2:1. The lighting ratio shows the difference between the brightness of key light and fill light.

Lighting is a creative work and you can decide the lighting ratio according to your need. You can also experiment with different lighting ratios, but 2:1 is considered to be a popular lighting ratio. It means, key light should be two times brighter than fill light. If you change the lighting ratio to 1:1, the brightness of key light and fill light will be the same and the darkness of shadows will be reduced considerably. This type of lighting is called flat lighting. In this, the contrast is significantly reduced and the picture appears visually dull. More difference between the brightness of key and fill light creates dramatic effects which are visually more interesting.

12.5 LIGHTING TECHNIQUES

As we discussed earlier, lighting is a planned use of light to achieve the desired effect. It is also a creative field. Here we shall discuss some of the lighting techniques commonly used in photography and television programme production.

12.5.1 Three-point Lighting

Three-point lighting is a basic lighting technique commonly used in photography and television production. As the name suggests, it uses three different lights - key-light, fill light and back light. Here, we shall discuss these lights in detail.

Key Light: Key light is the main light which is used to provide adequate light to the subject. It is the brightest light in the lighting setup. In natural lighting, the Sun is used as the key light. You can place key light according to your need but usually we place the key light 45 degree vertical and 45 degree horizontal from the lens axis. So, key light illuminates the subject from one direction and creates shadow on the other side. Figure (4) explains the placement of key light.

Fill Light: As the name suggests, fill light is used to fill the shadows created by the key light. It reduces the contrast of the image. Generally softer lights are used as the fill and it has less intensity (generally 50%) than the key. You can reduce its intensity by taking the light away from the subject. Diffusers can be used to create the fill light. In natural lighting where sun is used as the key light, you can use the reflectors as fill. We place the fill light on the opposite side of the key light. For example, if key is placed on the left side of the camera, fill will be put on the right side. You can see the placement of fill light in the figure (4).

Back Light: The back light illuminates the subject from behind. It illuminates the shoulders and hair of the subject and separates the subject from the background and gives a three dimensional look. If you do not use the back light, then your subject will be affixed to the background. You can place the back light diagonally opposite to the key. Figure (4) shows the placement of back light.

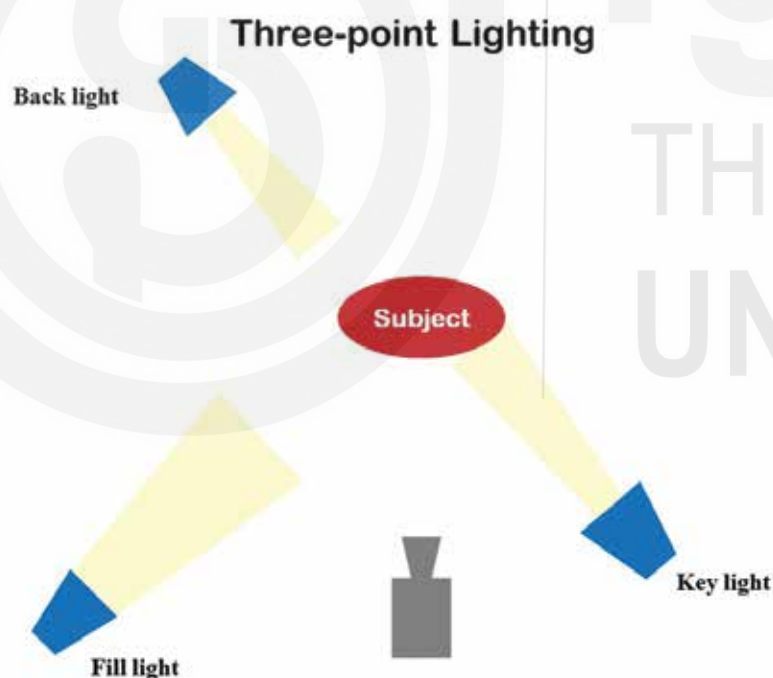


Image Source: Amit Kumar

Figure 4: Three-point Lighting

In three-point lighting, you can use these three lights according to your requirement. You can experiment with their intensity and placement.

12.5.2 Four-point Lighting

In four-point lighting, we add one more light to three-point lighting setup and that light is the background light. Let us discuss about the background light.

Background Light: We should not confuse between the background light and the back light. The background light is completely different from the back light. It is used to highlight the background. If we want our background to come in the frame, then in this case the background light is used. The direction of this light is towards the background.

Following diagram (Figure-5) shows a four-point lighting setup.

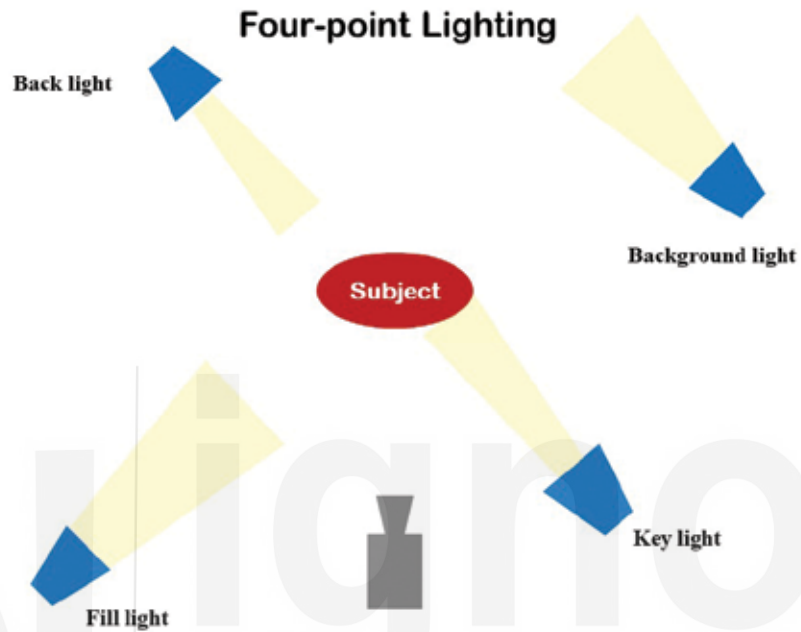


Image Source: Amit kumar

Figure 5: Four-point Lighting

12.5.3 High-Key Lighting

High-key lighting is a lighting technique where the difference between the brightest area and the darkest area in the image is very low. It has low contrast. It means, there is not much variation in the amount of light in the entire frame. If you see a scene or image that has enough light on everything that comes inside the frame, it is an example of high-key lighting. It displays an upbeat mood. High-key lighting is used in cheerful scenes, television news, TV interviews etc. High-key lighting can be done by using more fill light or soft/diffused light.



Figure 6: High-key lighting

12.5.4 Low-Key Lighting

This is just opposite to the high-key lighting. In scenes or pictures where low-key lighting is used, the contrast is greater. That is, there is a considerable difference in the amount of light at the brightest and darkest areas in the frame. Low-key lighting is used to create drama. It is considered to be aesthetically more creative and frequently used in films. It attracts the viewers' attention to a specific area in the frame. Low-key light is also used in portrait photography. Generally, we use only key light in low-key lighting. We should use hard light as the key.

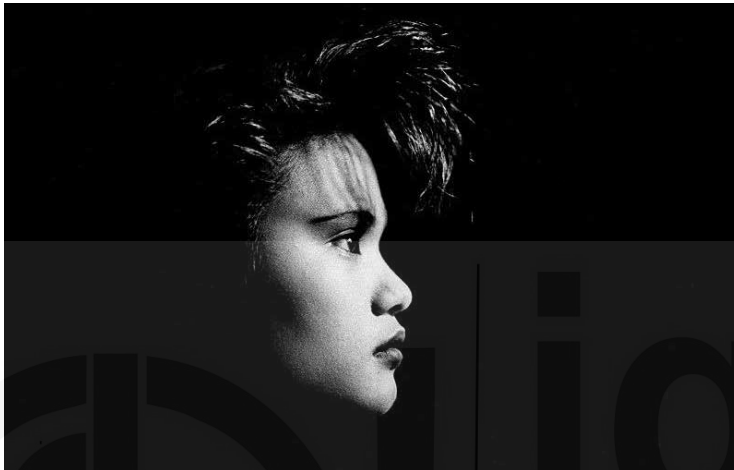


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Figure 7: Low-key lighting

12.5.5 Other Types of Lighting

Now, we shall discuss some other popular lighting techniques used in television production and photography.

Split Lighting: When we place the key light at the 90° from the camera, it illuminates half of the subject's face. Half of the face is bright and half is in the shadow. Since this type of light splits the face into two almost equal parts (half illuminated and half dark), it is called split lighting. It creates dramatic effects. Figure (8) shows the example of split lighting.



Figure 8: Split Lighting

Flat Lighting: The lighting which produces very minimum shadow is called flat lighting. In flat lighting, you will find very little contrast. It lacks depth and details. It gives uniform illumination across the frame. If we illuminate the entire frame area with a large light source, the effect of flat lighting is created. The effect of flat lighting can also be created by illuminating a subject from the front. The camera mounted lights result in flat lighting. If we keep the intensity of key and fill lights the same (1:1), it will create flat lighting. Although flat lighting makes the image or shot visually dull but it also has some advantages. With the help of flat lighting, we can hide skin imperfections like blemishes, wrinkles, etc.

Silhouette Lighting: The silhouette lighting effect can be created if you turn off the lights illuminating the subject from the front (key and fill light) and keep the background light on. Silhouette lighting produces a dramatic effect. It is also used in television news channels or documentary films to hide a person's identity. Following figure (9) shows an example of silhouette lighting.



Figure 9: Silhouette Lighting

Cameo Lighting: In this lighting technique, we place the subject in front of the dark background. Light is thrown only to the subject from the front and the whole background is completely dark. Cameo lighting can be done with the help of spot lights. The objective of this type of lighting is to bring the entire focus of the audience to the highlighted portion of the composition.

Activity 2

Take any small statue or doll available in your house and keep it in a completely dark room. Then arrange three torches. Use these three torches as key light, fill light and back light. You can use white paper as diffuser. Taking the help of your family members, do the following activities and take their pictures with your mobile phone:

- i. Illuminate the statue only with key light.
- ii. Switch on both key and fill light.
- iii. Use all the three lights (key, fill and back).
- iv. Use only the back light.

Now, analyse these four pictures and write down the role of key, fill and back light in three-point lighting in your words.

Check Your Progress 2

Note: Use the space given below for your answers.

Compare your answers with those given at the end of the unit.

1. What is three-point lighting ?

.....

2. Explain cameo lighting ?

.....

3. Which of the following is not a part of three-point lighting ?

- a. Fill light
- b. Background light
- c. Key light
- d. Back light

4. Back light and background light do the same work.

- a. True
- b. False

12.6 LIGHTING INSTRUMENTS AND ACCESSORIES

Lighting requires different equipment. In this section, we shall discuss different types of lights and lighting accessories.

12.6.1 Different Types of Lights

Different types of lights are used in photography and television programme production. Here, we shall discuss some of them.

Spotlight and Floodlight: On the basis of the spread of the light beam, we can classify lights into two categories - spotlight and floodlight. Spotlight creates narrow light beam, generally not more than 45° . It is used to highlight a small area or a particular subject/object. The floodlight, on the other hand, produces wider light beams and can illuminate larger areas.

Tungsten Halogen: It is an incandescent lamp that produces light by heating a tungsten filament. Since halogen gas is also used in this light, it is called tungsten halogen. It is very cheap and earlier it was very popular in video production. It is a powerful light that can produce high intensity light. Tungsten halogen gives yellowish light with 3200K colour temperature, so does not match with daylight. Its energy efficiency is quite low and it produces a lot of heat as a by-product. In the context of light, energy efficiency means what percentage of the consumed electricity is converted into light. More energy efficient lamps produce more light by consuming the same amount of electricity.

HMI Light: HMI stands for hydrargyrum medium-arc iodide. This light came into the market in the 1960s. It became very popular among filmmakers. It has many advantages. HMIs are nearly four times more energy-efficient than tungsten. It also produces heat but much less than tungsten. It gives high intensity light with 5600K to 6000K colour temperature which matches with daylight. With a strong HMI light, you can create the effect of a sunny day even at night. These lights are also used as fill lights during daytime exterior shoot. But HMIs are very expensive and require enough expertise to handle them.

Fluorescent Light: Fluorescent lamps produce soft light. They can emit light with different colour temperatures. They are more energy efficient than incandescent lights, therefore producing very little heat. Since a single fluorescent lamp or tube cannot produce adequate light, you will find fluorescent banks in studios with 2, 4 or 6 tubes.

LED Lights: LED stands for Light Emitting Diode. These are the most energy efficient lights that produce the lowest heat. You can keep these lights closer to the subject. Their lifespan is also longer than incandescent and fluorescent lights. LED lights are also robust. They can produce light of different colour temperatures. LED is rapidly gaining popularity in the television and film industry. It is considered the light of the future.



Figure 10: LED Camcorder Light

(A battery operated LED light with diffuser and barn doors. It can be mounted on the camcorder)

Sungun: Sungun is quite a popular light in video production. It is very cheap and handy. You can mount it on the camera or put it on light stand by using the adapter. It can also be used by holding it in the hand. When mounted on cameras, it illuminates the subject from the front and creates flat lighting. Earlier, tungsten halogen lamps were used in sunguns, but now LED sunguns are also very popular.

Fresnel Light: Fresnel lights are lights that use Fresnel lenses. These lenses are used to produce light beams of different angles and named after their inventor, Augustin-Jean Fresnel, who invented this lens initially for use in lighthouses. You can make wider and narrower light beams with the same light. Different companies make fresnel lights with different beam ranges but commonly these lights can produce light beams between 14° to 55°. Fresnel lights are available with tungsten lamps as well as LEDs.



Figure 11: Fresnel Light

12.6.2 Lighting Accessories

Lighting accessories also play a very significant role in the whole lighting process. Now, we shall discuss about some important lighting accessories.

Gels: Gels are transparent sheets that can be placed in front of light sources to modify the colour temperature, colour, quality, or intensity of light. Generally we use four different types of gels in photography or television production - neutral density gels, diffusion gels, colour correction gels and colour effect gels. Neutral density gels are used to reduce light intensity. By using these gels, you can cut the brightness of the light without affecting other light properties. Diffusion gels diffuse the light and make it softer.

Colour correction gels are used to modify the colour temperature of the light. There are two main colour correction gels - CTB and CTO. CTB stands for Colour Temperature Blue. It is used to cool the lights. With the help of CTB, you can convert tungsten (3200K) into daylight (5600K). The second is CTO. CTO stands for Colour Temperature Orange. This is the opposite of CTB. It is used to warm up the lights. You can convert daylight (5600K) to tungsten (3200K) using this gel. The last one is the colour effects gel. Colour effects gels modifies the colour of light. You can create colourful backgrounds with the help of these gels.

Light Stand: Light stands are used to mount different types of lights. You can adjust the height of the light stand according to your needs. Following figure (12) shows a light stand.



Figure 12: Light Stand

Barndoors: Barndoors are fixed in front of the lights. 2-leaf or 4-leaf barndoors are very common. They are used to shape light beams. With the help of barndoors you can also cut the light and experiment with many creative lighting patterns. Following figure (13) shows a 4-leaf barndoor.

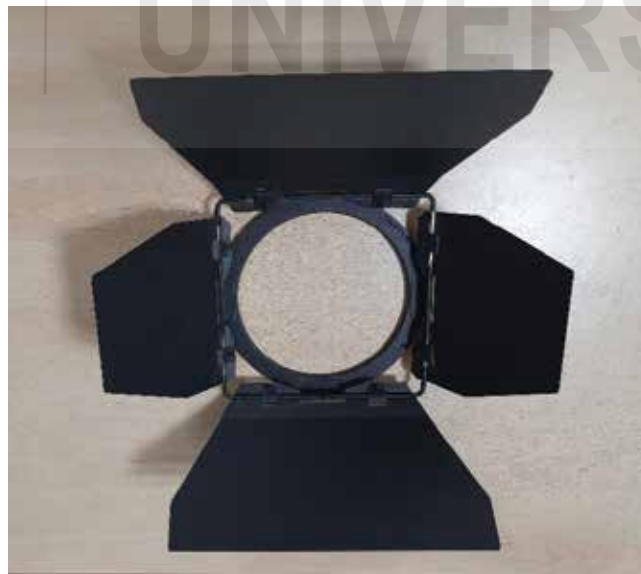


Figure 13: 4-leaf Barndoor

Scrim: Scrim is a metal mesh like device which mainly reduces the intensity of light. It does not affect the colour temperature. Scrim comes in different strengths which reduces light to varying amounts. Single scrim reduces the

intensity of the light by a quarter, while the double scrim reduces it by half. If you place a double scrim in front of the 650W light, its intensity will be reduced to 325W. In incandescent lights, if you use dimmer to modify the intensity, its colour temperature will be affected. So, it is more appropriate to use scrims. In the figure (14) below, the scrim with a green frame is a single scrim, while the red one is a double scrim.



Figure 14: Single and double Scrims

Reflectors: The reflectors are used to reflect light. Reflectors are used in both outdoor and indoor shoots in photography or television production. We also often use reflectors as fill light and back light. Suppose we are taking the sun as our key light, then with the help of reflectors we can reflect the sunlight and use it as fill and back. Reflectors are used extensively in lighting. You can see the different reflectors in following figure (15).



Image Source: Scott Riggle (CC BY 2.0)

<https://www.flickr.com/photos/scottriggle/13876212595/in/photolist-n9cdyK-FfnLM-4mh6NR-5fqQS-4WsXpn-jRWbkr-5ri2HL-8jgAdY-qwY7gK-imwYx8-gYsZXS-imwUCK-s1Xed-9KHjYx-pVzXV-fNd1qe-c2MPum-dNGSAy-7tgYN7-Ffktd-2UnSee-9rr9gD-2UjXk6-ff3Jh8-2Uthbu-2UkYLk-aw7J2H-yAW72-aVudMc-4odVV-c2MP4G-2V3nNB-5bwTt2-d2K8QL-nUrQJT-pmKig1-k2Y8pc-9CQWe3-9yE1kN-9zNetE-7VMJ7d-2WzeSE-8EnS7e-aknmMq-8UtTe4-59dJfF-fNd1rk-2V3px6-2V7No9-gYt3Wf>

Figure 15: Reflectors

Softbox: Softbox is used to soften the light. It diffuses the light, which makes the hard light relatively soft. It is used extensively in photography and television production. Its side and back walls are shiny which reflect the light and there is a diffuser in front which diffuses the light and produces soft light. Softboxes come in different shapes and sizes. Larger softboxes will produce softer light than the smaller ones.

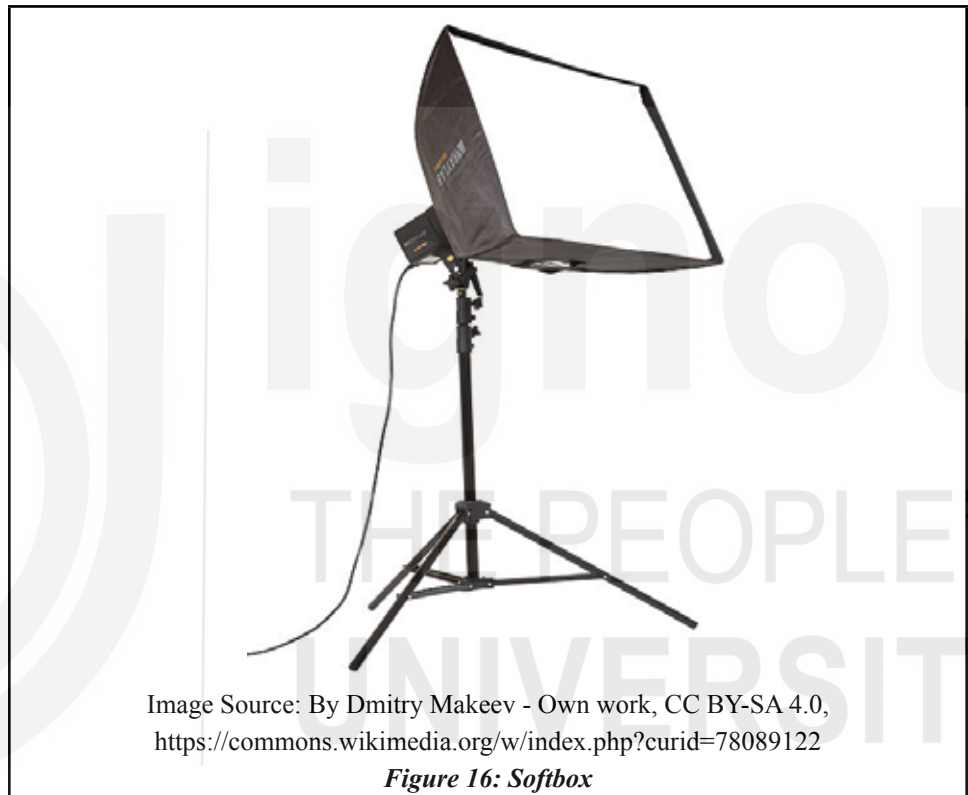


Image Source: By Dmitry Makeev - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=78089122>

Figure 16: Softbox

Check Your Progress 3

Note: Use the space given below for your answers.

Compare your answers with those given at the end of the unit.

1. List any five important lighting accessories.

.....

.....

.....

.....

.....

2. CTO stands for _____.
 - a. Colour to Orange
 - b. Colour Temperature Opposite

- c. Colour Temperature Optimum
 - d. Colour Temperature Orange
3. CTO and CTB gels perform opposite functions.
 - a. True
 - b. False
 4. Fresnel light uses a lens.
 - a. True
 - b. False

12.7 LET US SUM UP

As we have already discussed, lighting is the backbone of photography and television / film production. Therefore, its importance is undisputed. It is a creative field and an important tool for visual storytelling. In this unit, we discussed various aspects of lighting in the context of photography and television production. We learned about the different characteristics of light because knowing them is essential to understand the nature of light. We also discussed some basic concepts related to lighting. Lighting is a creative field and you can choose lighting techniques according to your needs. You can also do many new experiments. In this unit, we also discussed some fundamental and popular lighting techniques. To be able to do effective lighting, it is necessary that we also know about the equipment used in it. Therefore, different types of lights and lighting accessories were also discussed.

12.8 REFERENCES AND FURTHER READING

- Belavadi, V. (2013). Video Production. Oxford University Press.
- Millerson, G. (2013). Lighting for TV and Film. CRC Press.
- Owens, J. (2020). Television production. CRC Press.

12.9 CHECK YOUR PROGRESS: POSSIBLE ANSWERS

Check You Progress 1

1. The incident light is the light that falls directly on the subject. It is different from the reflected light. The intensity of incident light depends upon the brightness of the light source. On the other hand, reflected light is the light reaching the camera lens, reflected from the surface of the subject. The reflected light gives you a perfect idea of how much light is bounced off the various subjects and reaches the camera lens. The intensity of reflected light depends upon two things. First, brightness of the light source and second nature of the objects' surface.
2. The soft light casts soft edged shadows. Soft lights are diffused and creates even distribution of colour tones and fewer shadows resulting in low contrast in the picture. You can find this type of light during cloudy days as the light from the Sun gets diffused passing through the clouds. The light then gets evenly distributed avoiding harshness.

In artificial lighting, diffusers and papers are used to diffuse the light manually to get the even tone.

3. b. Reflected light
4. b. False

Check You Progress 2

1. Three-point lighting is a basic lighting technique commonly used in photography and television production. As its name suggests, it uses three different lights - key-light, fill light and back light. You can use these three lights according to your needs.
2. In cameo lighting, we place the subject in front of the dark background. Light is thrown only to the subject from the front and the background is completely dark. Cameo lighting can be done with the help of spot lights.
3. b. Background light
4. b. False

Check You Progress 3

1. Gels, reflectors, softboxes, scrims, barndoors
2. d. Colour Temperature Orange
3. a. True
4. a. True

