

12. TECHNICAL RESOLUTION: FILM LIGHTING

“Heaven would never use a fluorescent tube to light a room.”

-Paulo Coelho in ‘Veronica Decides to Die’



Figure 12.58 Three point lighting

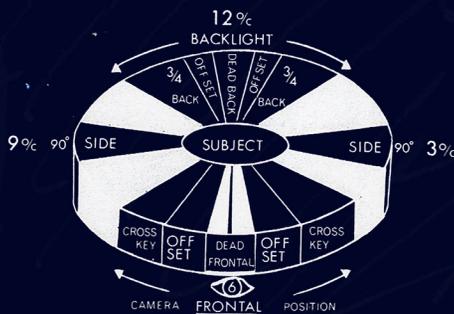


Figure 12.59 Lighting direction (Zettl 2000:64)

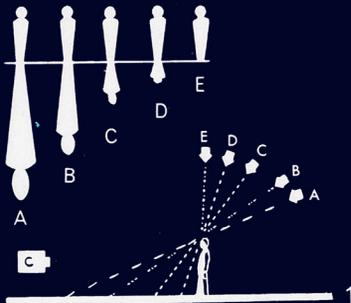


Figure 12.60 Shadow length (Zettl 2000:84)

12.1 THE IMPORTANCE OF FILM LIGHTING

Lighting is not part of the field of production design (Weavind 2009), but the field of the DP. Film lighting is a highly specialised field and requires a special team to execute it (a few role players of this department is mentioned in the chapter on production design). Because film is light, every role player in film needs to be sensitive to light, regardless of work description (Campbell 2002:74).

Lighting is also essential for the atmosphere and visual appearance of a film, for which the PD is responsible. Film lighting also assists in focusing the audience's attention (Block 2001:121; Campbell 2002:55).

Therefore a lighting study was done up to the point where a basic specification for the visual 'look' and suggested light sources could be handed over to the DP for more in depth specifications.

12.2 FILM LIGHTING PRINCIPLES

12.2.1 THREE POINT LIGHTING

Although film lighting is a very complex field, this basic setup is the starting point when lighting a scene (Bordwell and Thompson 1997:181; Mamer 2002:236) and needs to be understood before a basic 'lighting plot' can be done.

Key Light / Point Source

The key light is the main source of light illuminating the scene. It is often at a 45 degree angle to the left or right of the camera. It illuminates the subject and creates shadows. The sun is also considered a key light source (Mamer 2002:236; Tumminello 2005:123).

Fill Light

The fill light is usually on the opposite side of the camera in relation to the key light. “The fill light ‘fills in’ or softens the shadows created by the key light and lowers the contrast between light and dark (Mamer 2002:236; Tumminello 2005:123).

Backlight

A source light that is positioned behind an object or subject, “which allows the object to stand out from the background” (Bordwell and Thompson 1997:179; Mamer 2002:236; Tumminello 2005:123).

There are numerous other types of lighting placements added to these three basic lighting positions, of which only the applicable types are briefly discussed.

Sidelights / Crosslights

Used to create and cast sharp and long shadows. “A strong contrast is created when one side of an object is brightly lit and the other is in shadow. Side lighting creates a three-dimensional effect because of the shadows [cast] on one-side of an object.” This is opposed to frontal light that creates a flat image (Bordwell and Thompson 1997:179; Tumminello 2005:129).

Background / Set light

The light used to light background sets. It is best if it is placed on the same side as the key light (Zettl 2000:163), in order to promote lighting continuity.

12.2.2 HIGH KEY AND LOW KEY LIGHTING

High key and low key lighting essentially refers to the relationship between the key and the fill light. “The relationship of key to fill light is described with the contrast ratio [or fill ratio]...If the contrast ratio is high then the key is much stronger than the fill, producing deep, dramatic shadows” (Campbell 2002:71; Brown 1996:63).

High Key / Normal Key

High key lighting has minimal contrast between light and dark areas. There are minimal shadows and an even distribution of light. (Bordwell and Thompson 1997:179; Mamer 2002:238; Tumminello 2005:124). This is the basic lighting concept that was followed for heterotopia.

Low Key

Low key lighting has a high contrast between dark and light areas. There is an abundance of shadows and an uneven distribution of light. It is a moody and atmospheric type of lighting, which was popular in the German Expressionistic films and *film noir*, because the dark shadows allowed for minimal set construction in times of economic hardship (Bordwell and Thompson 1997:179; Mamer 2002:239; Tumminello 2005:124). Such a lighting setup is the basic lighting concept followed for dystopia - in order to produce deep shadows.

“If the fill is close to the key in intensity, the shadows will be light and the shot will be high key. If the fill is much less intense than key, the shadows will be darker and thus the shot more low key” (Mamer 2002:240).

12.3 FILM LIGHTING EQUIPMENT

Lights are generally referred to as ‘instruments’, in order to distinguish between the light source (equipment) and the light itself” (Mamer 2002:241). Grips and gaffers often call lighting instruments ‘heads’ (Campbell 2002: 228).

12.3.1 LIGHT SOURCES

Light sources used in the production design of *The Lorax* are discussed below.

Light sources are named according to their wattage, for example an 18k is 18000 watts or 18 kilowatts. The ‘k’ stands for ‘one thousand’ An 18k HMI, means the source uses an HMI bulb (Box 2003:447). Different light sources also have different colour temperatures, measured in degrees Kelvin (K). Please see the appendix for more information on colour temperature.

HMI's

‘HMI’ stands for high pressure mercury metal iodide (Millerson 1991:288). HMI's were designed by OSRAM to simulate the colour of daylight and has a colour temperature of 5600K (Block 2001:242).

HMI's are efficient lights for wattage usage as it turns more energy into illumination as opposed to heat, than tungsten lamps. “HMI's generate three to four times the light of tungsten-halogen, but consume up to 75% less energy...”(Brown 1996:41, 127; Campbell 2002: 126; Zettle 2002:136, 155).

HMI-type lamps are available up to **18k** (Millerson 1991:291) which are often used to simulate **moonlight** or sunlight by mounting units on cranes (Brown 1996:41; Campbell 2002:

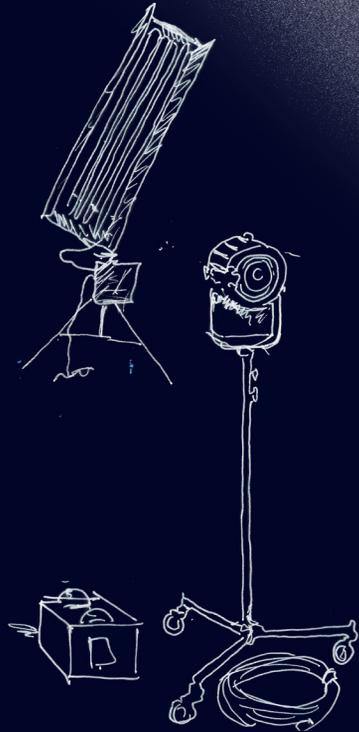
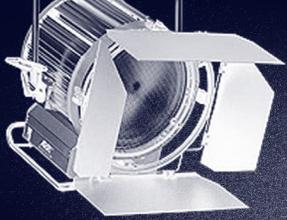


Figure 12.61 *Left, from top:* 18k HMI

Figure 12.62 Kino Flo Four Bank

Figure 12.63 HMI and Ballast

Figure 12.64 Rosco Smoke Machine

135). One of these on a crane, can light up an entire city block at night (Campbell 2002: 130-131). An 18k will be used as the key light in dystopia for the production of *The Lorax*.

The **2.5k** is a general purpose light. The **1.2k** is a smaller and versatile HMI unit. It is lightweight and compact (Brown 1996:42). The **575-watt** version HMI is the smallest HMI unit often used in interior settings (Campbell 2002: 130-131).

Kino-Flos

Fluorescent lights used to have a negative reputation in the film industry due to the fact that “[t]hey only reproduce a narrow part of the colour spectrum, they flicker, they can’t be dimmed and their colour temperature is positively green” (Campbell 2002: 132).

Today Kino-Flo, manufactures film-friendly fluorescent fixtures that are “lightweight, efficient, flicker-free and most importantly colour-correct” (Campbell 2002: 132). Kino Flos are also lightweight which means it can follow actors around. The light produced by Kino-Flos wrap around actors’ features and fills in shadows to produce a “smooth shadowless light” (Campbell 2002: 132). This is what will be used to film ‘You’ from the front while his back is turned to the camera - creating only an edge of lighting and rendering the actor as a silhouette (Louw 2009).

Blondes

A **1k blonde** will be used. It is open-faced light -which means it has quite a high output of light. The lighting quality is quite yellow, which is the typical look for a light shining through a window in a night scene (Louw 2009). This is

what will be used to shine through the Once-ler's window onto 'You'.

12.3.2 LIGHTING CONTROL

Numerous devices are available to control the fall, intensity and quality of light.

Colour Filters

> **Colour balancing filters / conversion filters** are used to correct lighting or camera colour temperature.

> **Colour enhancement filters/gels** for 'effects lighting' such as moonlight (Millerson 1991:42). Gels are coloured plastic or gelatin sheets that are placed over lamps to produce a colour light. It is available in a wide varieties of colours (Block 2001:120; LoBrotto 2002:177; Van der Walt). Gels are attached to lights with C-47s (Brown 1996:153).

Gels, from the international company Rosco, can be obtained from local suppliers. Gels are classified as 'expendables' meaning it is used up (it melts due to the heat of light sources), thus roles of gels are kept handy when filming (Box 2003: 447; Movie Camera Company 2008:47; van der Walt 2009).

"Blue light is widely accepted as a convention to simulate moonlight...[m]any Lighting Directors prefer light blue...for this purpose" (Millerson 1991:261). Light blue gels will be added to the key light in dystopia for the production of *The Lorax* for a **moonlight effect** (van der Walt 2009).

It is important to distinguish between when a coloured gel is used and when a colour bulb is used. Gels are used for a coloured effect or hue - such as blue moonlight, whereas a bulb would

be used in 'practicals' if a coloured look is desired, such as the red lights of 'UNLESS' (Stoller 2003:171; van der Walt 2009).

Diffusers

A diffuser is filter with a slightly uneven surface which refracts light (Movie Camera Company 2008:59).

The 18K produce a sharp light, therefore it is best if a diffuser gel is added for the moonlight effect (Brown 1996:41; van der Walt 2009).

Cookie (Cukaloris)

A piece of light modifying equipment that is a cutout design that breaks up the light (Mamer 2002: 255). It can be made from cardboard, plastic, wood, steel or any available material with a bit of stiffness. A half moon cutout cookie is used to create the moonlight look in the scenes with the Once-ler's Lerkim.

12.3.3 EFFECTS: THE FOG MACHINE

Smog or fog in film are special effects. It is done by the lighting department, under the DP.

For a general fog effect, two standard Rosco Fog machines on each side of Church street can be used. Thus a heavy fog effect will be achieved on the ground and a lighter one up higher.

Rosco Smoke Machines can be obtained from The Movie Camera Company, based in Johannesburg and Cape Town.

The aerosol from a Rosco fog machine is naturally buoyant and tends to follow air currents. If the fog (not the fluid) is chilled, it will be heavier than air and lie low to the ground. To achieve this effect, Rosco offers the Chiller Module as an accessory for Rosco fog machines. By running

the fog over regular ice or dry ice (dry ice works best), it is chilled below ambient temperature. For ideal low lying fog, Rosco Stage & Studio fluid is used. "Water fog, liquid nitrogen, carbon dioxide or dry ice (solid carbon dioxide) would only produce a short lived fog with a lot of residual moisture" (Rosco laboratories 2009).

"The fog is produced from water-based glycol and glycerol. It has been extensively tested and is generally considered non-hazardous" (Winslow 2006:152).

It is suggested that two Rosco fog machine are used in conjunction with the Chiller Module accessory to the left and right of Church Street, in order to achieve an effect where the fog stays mostly low to the ground.