



The Professional Lighting

for Photo, Video, Cine & Theatrical

SourceBook

Glossary

Lighting Terms

A

- A** - Abbreviation for *Ampere* or *Amperage*.
- AC Voltage** - An abridged version of *Alternating Current Voltage*.
- Accent Light** - Used to draw extra attention to one section of the subject, and add interest and sparkle.
- Ambient Light** - The surrounding light exclusive of that being directed on a specific subject, usually non-directional.
- American National Standards Institute (ANSI)** - An independent industry-wide association that establishes standards to promote consistency and interchangeability among manufacturers.
- Amp** - An abridged version of *Ampere*.
- Ampere (A)** - A unit of measurement for *Electrical Current*.
- Angle of Light** - The angle formed between the light-subject axis and camera-subject axis. Both horizontal (H) and vertical (V) should be specified. Examples: Camera-top light about 0° H, 5° V; rim light 180° H & V; key light commonly 15° to 45° H and V.
- Anode** - An electrode that is positively charged, i.e. the electrode which electrical current moves toward.
- ANSI Code** - A three letter system that has been devised to describe lamps of different manufacture but the same application. The letters have no relationship to lamp description, but the same letters always designate the same type of lamp. Some of the application parameters they define are wattage, base type, envelope size and light center length.

- Aperture** - 1) The planar opening within the optical system of a luminaire that defines the total amount of usable light created by the optical system. 2) A circular ring that attaches to the front of a snoot used in the film and video industries to alter the size and light center strength.
- Arc** - The light caused by an electrical discharge between two electrodes in a gas such as xenon, argon or air. The first usable arc as a practical light source was developed in 1809 by Sir Humphrey Davy.

B

- Backdrop** - A vertical surface with painted designs which is used to form the background for a theatrical type setting, usually made of heavy cloth drawn tight to achieve a smooth, flat surface. It may sometimes be used as a cyclorama when painted as a sky.
- Back Light** - 1) Used behind the subject and pointing toward the camera for separation.
- Background Light** - Aimed at the background for separation of subject and background.
- Balance** - An abridged version of *Color Balance*.
- Ballast** - An electrical apparatus that limits the electrical current in a particular circuit, usually a circuit containing an arc source.
- Barn Doors** - An apparatus with adjustable flaps, usually 2, 4 or 8, that attaches to the front of a luminaire. It is used to block or shape the beam.
- Beam** - In Photometry, the circular area of the base of a cone shaped beam where the intensity is at least 50% of the maximum intensity. The maximum intensity is ideally located at the center of the

base. It should be noted that some luminaires, such as ellipsoidal spotlights and follow spots, can be adjusted or designed such that the light emanating from them does not include the entire beam, i.e. the edge of the beam is greater than 50% of its center.

Beam Angle - The angle of the vertex of a cone shaped beam where the perimeter of the base is defined by where the intensity is 50% of the maximum intensity.

Beam Diameter - The diameter of the base of a cone shaped beam where the perimeter of the base is defined by where the intensity is 50% of the maximum intensity.

Boom - In the film and video industries, an adjustable arm mounted at an angle from a vertical pipe or stand, often counter-balanced, used to hold lighting or sound equipment.

Borosilicate Glass - A type of glass commonly used for lenses and mirrors.

Breakup - See the definition for *Cucoloris*.

Broad Light - A light unit with a wide beam spread.

Bulb - Quite often this term is used interchangeably with *Lamp*.

Butterfly - A large fabric scrim, diffuser, reflector or opaque fabric panel used for dimming, softening, bounce lighting and shading, respectively. They are usually 4' to 8' square and mounted on yoke supported frames.

C

Cable - 1) To run, hook up and/or interconnect electrical cables and the items to which the cables are connected. 2) A strong, flexible wire rope made of steel, used to support pipes, battens, truss, etc., from an overhead structure.

Cam-lok - A commonly used type of insulated, locking, single conductor cable connector manufactured by

Crouse-Hinds Inc. The name *Cam-lok* is trademarked.

Capacitor - A component designed to have a specific amount of capacitance.

Casters (Castors) - Wheels placed on stands, trunnions, road cases, or anything that requires easy mobility.

C-Clamp - In the film and video industries, a "C" shaped clamp that attaches onto a pipe and locks with the aid of a bolt, that when tightened, presses like a vice onto the pipe. It also has a stud or studs for the attachment of luminaires, grip equipment, etc.

Celo (Cello) - A term used to describe a translucent *cucoloris*.

Century Stand (C-Stand) - A grip stand manufactured by *Matthews Studio Equipment Corp.* The name *Century Stand* is trademarked.

China Silk - A fabric used for linear diffusion material, i.e. it spreads the light linearly.

Chroma - In the video industry, a measure of color intensity, i.e. it describes the saturation of a hue.

Cine - Of or relating to the film and video industries.

Circuit Breaker - An electrical device designed to open and close a circuit by nonautomatic means and to open the circuit automatically on a predetermined overcurrent without damage to itself.

Color Correction - Adjusting the color temperatures of various luminaires so that they are all the same, or to make them match existing light sources, e.g., sunlight or fluorescent light. This is usually accomplished by utilizing color media, but adjusting the input voltage levels is a method sometimes used for some luminaires.

Color Frame - An apparatus used to hold color media or other types of filters. It can be of various shapes and sizes and may comprise one or more pieces.

Color Temperature - The temperature, in degrees Kelvin, of blackbody that generates light with the closest visual color match to the source being specified, i.e. a measure of the color appearance of light, not the actual temperature of the light.

Color Wheel - An apparatus holding several different gels that can be rotated by hand or motor such that any one gel can be placed in front of a luminaire with relative ease.

Conductor - Generally, anything that will carry electrical current, but usually refers to an insulated wire.

Connector - 1) Specifically, the name for a family of electrical wiring devices, such as plugs and receptacles, comprising one or more contacts, a means for electrically attaching a conductor to each contact, a means for electrically insulating each contact from the other, and an overall insulating material around the complete assembly - such that only the contacts are exposed when the connector is properly installed to the item containing the conductors. 2) Generally, any item used to make an electrical connection between two or more separate conductors.

Contrast Ratio - Compare two reflected-light readings: 1) the lightest significant area of the subject or scene, vs. 2) the darkest. Each medium or method of reproduction has different brightness ratio limits. Projected films about 125:1 (seven stops); Video about 32:1 (five stops). Also see *Lighting Ratio*.

Convection Cooling - A cooling process whereby air circulation is maintained in order to transfer heat from an object to the atmosphere around it by supplying adequate ventilation and/or heat sinks, and without the use of electrical or mechanical items such as fans, blowers, etc.

Convex - A term used to

describe a lens side that is outwardly and usually spherically curved.

Cookie (Cooky) - An abridged version of *Cucoloris*.

Cool Light - Light having a color temperature of approximately 3600°K to 4900°K, i.e. bright-white to blue-white.

Crank-Up Stand - A stand that is raised and lowered with the aid of a rotatable handle and gear mechanism.

Crown Glass - A type of glass that has excellent optical quality, used for lenses and mirrors.

C-Stand - An abridged version of *Century Stand*.

Cucoloris - An opaque or translucent material having a cutout which will allow light to pass through the cutout area in order to project a dappled form, such as a cloud formation on the subject and background.

Cuke (Cukes) - An abridged version of *Cucoloris*.

Current - An abridged version of *Electrical Current*.

Cutter - A narrow, rectangular flag, ranging from 18" to 72" in length, and 6" to 24" in width, generally used to block only a portion of the beam.

Cyc - An abridged version of *Cyclorama*.

Cyc Light - An abridged version of *Cyclorama Light*.

Cyclorama (Cyc) - A vertical surface which is used to form the background for a theatrical type setting, usually made of heavy cloth drawn tight to achieve a smooth, flat surface. It usually represents the sky or suggests limitless space. Traditionally, cycloramas were dome shaped or horizontally curved, but may now also be flat or vertically curved, as well.

Cyclorama Light (Cyc Light) - A luminaire mounted at the top and/or bottom of a cyclorama in order to light it in a smooth, uniform manner.

D

Daisy Chain - 1) A control signal wiring system employed in the interconnection of a plurality of some electronic items, such that the first item's output connector is connected to a second item's input connector via a control cable. A third item is connected to the second in the same manner, and so on until all items have been connected. The control console is connected to the input connector of the first item only, but sends data to all items via the interconnecting control cables. Some items that can sometimes be daisy chained are color scrollers, automated luminaires, and dimmer racks or packs. 2) See the definition for *Feed Through*.

Daylight - Light that has a color temperature of approximately 5500-5600°K, which has been approximated to be the color temperature of ordinary sunlight during the day under normal atmospheric conditions.

Daylight Filter - A filter used to balance light from a source such that the spectral distribution will approximate daylight, i.e. 5500-5600°K.

DC - Abbreviation for *Direct Current*.

DC Voltage - An abridged version of *Direct Current Voltage*.

Dichroic - A type of metallic coating applied to glass and some other materials that allow certain wavelengths of light, or other electromagnetic radiation, to pass while reflecting all others.

Diffuse - 1) To scatter light using diffusion material. 2) A term used to describe a somewhat dull and/or stippled surface that is moderately reflective.

Diffuse Light - Soft, generally even illumination.

Diffuser - 1) Generally, something made of diffusion material. 2) In the film and video industries, a fabric panel, used for diffusing, with the light source being a luminaire

or sunlight. They are available in a variety of sizes and shapes, and materials of varying textures.

Diffusion - An abridged version of *Diffusion Material* or *Diffusion Media*.

Diffusion Frame - An apparatus used to hold diffusion material. It can be of various shapes and sizes, and may comprise one or more pieces.

Diffusion Material - Any reflecting or transmitting media for which the reflected or transmitted light is distributed uniformly, i.e. scattered over a wide range.

Digital - A term used to describe the use of binary code to record information reduced to numerical form, usually instructional information when referring to control consoles.

Digital Multiplex (DMX) - A system that simultaneously transmits more than one digital signal.

Dim - To change the intensity of a luminaire.

Dimmer - An apparatus used to control the intensity of a luminaire.

Dimmer Pack - A portable housing that contains a group of electronic dimmers, usually not less than 4 or more than 24. Some dimmer packs are designed such that they can be permanently installed.

Dimmer Panel - An apparatus, usually 19" long, that contains a group of electronic dimmers that get installed into a dimmer rack.

Diode - A solid state rectifier.

Direct Current (DC) - An electrical current that maintains constant direction.

Direct Lighting - Illumination on a subject or area that goes directly from the front of the luminaire in a straight line to the subject or area.

Distribution - 1) An abridged version of *Light Distribution*.

DMX - Abbreviation for *Digital Multiplex*.

DMX 512 - A somewhat unique digital multiplex signal with

specific characteristics that is commonly used in the stage and studio lighting industries. Control consoles designed to generate this signal were originally designed to control a maximum of 512 apparatuses, usually dimmers, but now can control many more.

Donut - A flat metal apparatus with a circular hole in the center used to reduce halation and sharpen the image when using patterns.

Dot - A small, round scrim, diffuser, reflector, or gobo, placed close to a luminaire, used for dimming, softening, bounce lighting, and casting shadows, respectively. They are usually 3" to 10" in diameter.

Double Ended Lamp - A somewhat elongated lamp that has a base and contact on each end.

Duvetyn (Duvatyne, Duvetine, Duvetyne, Duvyteen) - An opaque material used for butterflies, cutters, flags, gobos and overheads in the film and video industries.

E

Ears - The three individual slots that function as the color frame holder found on the front of some luminaires. They are often used to retain other items, such as color wheels, barn doors, etc.

Edison Connector - The standard household male, parallel blade connector that may or may not have a ground pin.

Edison Lampholder - The standard household screw-type lamp socket that accepts medium screw type lamp bases.

Egg Crate - A square or rectangular, partitioned apparatus that, when installed on large open face luminaires, reduces glare.

Electrical Current (I) - The flow of electrons from one point to another, in *Amperes*.

Electrical Frequency - The cycles per second of alternating current, in Hertz. In

North America, and parts of South America and South East Asia, the frequency is 60Hz. The rest of the world operates on a frequency of 50Hz.

Electrical Noise - A general term for an unwanted electronic disturbance in conductors or electrical or electronic equipment. This equipment can also be the cause of electrical noise.

Electronic Ballast - A ballast that uses electronic components to limit electrical current. This type of ballast is often referred to as flicker-free.

Ellipsoidal - An abridged version of *Ellipsoidal Spotlight*.

Ellipsoidal Spotlight - A spotlight that embodies an ellipsoidal reflector and framing shutters, and sometimes an iris and pattern slot.

Eye Light - A small, intense luminaire used to front light a subject, usually a person's face, with hard light.

F

f/ - Abbreviation for *F/Stop*.

Fahrenheit - A graduated scale used to measure temperature, with ice being 32° and steam being 212°.

Fall-Off - A term used to describe the illuminated area just outside of the field. (This term may also refer to the illumination in this area.) Light from a point source, falls off inversely to the square of the distance. Move the light from 10' away to 20' away, and you have 1/4 of the intensity; 40', 1/16th.

Diffused lights fall-off even faster than point sources. **Tip:** To minimize fall-off within a scene, use hard-lights as far away as practical.

fc - Abbreviation for *Footcandle*.

Female - A term applied to a connector that contains the holes and/or slots for receiving the pins, prongs, blades and/or tabs of a male connector. The female connector should always be attached to the line side of a circuit.

Field Angle - The angle of the vertex of a cone-shaped beam where the perimeter of the base is defined by where the intensity is 10% of the maximum intensity.

Field Diameter - The diameter of the base of a cone-shaped beam where the perimeter of the base is defined by where the intensity is 10% of the maximum intensity.

Filament - The wire inside an incandescent lamp envelope that glows and emits light when heated, i.e. when electricity passes through it.

Fill - To create the illumination needed to reduce shadows in an area or on a subject.

Fill Light - Used from the side opposite that of the key light, this light softens the shadows created by the key and evens out the lighting ratio.

Filter - A term that refers to color media, diffusion material, or neutral density filter.

Filter Frame - See the definition for *Color Frame*.

Finger - A small, narrow, rectangular scrim, diffuser, reflector, or gobo, placed close to a luminaire, used for dimming, softening, bounce lighting, and casting shadows, respectively. They are usually 2" to 6" in length, and 12" to 14" in width.

FL - A lamp designation that means "flood".

Flag (Filter, Gobo) - An opaque panel, usually made of fabric, placed into the beam of a luminaire to block a portion of the beam or the whole beam. It can also hide lights in the dark recesses of a scene. They are usually square or slightly rectangular in shape, ranging from 10" to 48" in length, and 12" to 48" in width. Which term you use depends upon the device's size and what part of the country you are in.

Flat Light - See the definition for *Diffuse Light*. All light is characterless, textureless and shallow-shadowed, when the source is close to the camera.

Soft light is, by its nature, flatter than Hard Light, but even a soft source, above or to the subject's side, is not flat. **Proof:** Vermeer.

Flicker - The strobing of some luminaires that cannot be visually detected because of the frequency of its output voltage, but can adversely affect the way motion picture film records light.

Flicker-Free - A term used to describe electronic ballasts that electronically alter the electrical frequency that causes flicker.

Flood - 1) The position of a moveable lamp, lens or pair of lenses on a spotlight that produces the widest field angle. 2) To direct a large amount of light on a relatively large area.

Flood Light - A luminaire consisting of a rectangular, lamp and sometimes a single lens, used to direct a large amount of light on a relatively large area.

Floppy Flag - A large flag that is designed to fold in half and function as a cutter or smaller flag.

Fluorescence - The property of certain materials to absorb radiation of certain wavelengths, usually ultraviolet, and re-emit the radiation as light.

Foamcore - A polystyrene, styrofoam material used as a substrate for some reflector boards, effective because of its lightweight and ease of mounting via reflector forks.

Focus - To aim and adjust a luminaire to give the beam its desired size (spot or flood), edge (soft or hard), field (even or peak), and/or shape (round, patterned or cut).

Focus Lens - A movable lens in a multi-lens optical system that adjusts the focus of a luminaire.

Follow Spot - A narrow-beam focusing instrument that is manually operated and usually comprises a powerful light source, an iris, shutters, a color changer, and perhaps other features. It is usually

operated from an adjustable stand and is used to follow performer(s) on a stage with its beam, surrounding the performer(s) in a large pool of light.

Footcandle (fc) - A non-metric unit of measurement for *Illumination*, i.e. 1 lumen per square foot.

Framing Projector - A spotlight that has framing shutters.

Framing Shutters - Thin, movable, heat-resistant metal plates that are introduced into a beam such that a portion(s) of the beam is blocked off, i.e. framed, affecting the beam pattern, usually forming a sharp edge in the beam. They are used in various types of luminaires, but extensively in ellipsoidal spotlights, usually 4 (top, bottom, right and left), and follow spots, usually 2 (top and bottom), always situated internally, and usually at the aperture. Framing shutters generally can be independently adjusted, but those used in follow spots usually move simultaneously with a single control mechanism.

French Flag - A small metal flag, usually used for shading.

Fresnel - An abridged version of *Fresnel Spotlight*.

Fresnel Lens - Named for its inventor, French physicist Augustin J. Fresnel, and developed around 1800 for lighthouses, this is a flat lens consisting of concentric rings on one side that are segments of the spherical portion of a plano-convex lens. The other side is flat, i.e. plano. It controls light in the same manner as a plano-convex lens. Many luminaires employing this type of lens have a stippled pattern on the flat side of the lens to diffuse and therefore smooth out the beam.

Fresnel Spotlight - A spotlight employing a single fresnel lens that produces a soft-edged beam and usually provided with a spherical reflector

and a means to adjust the focus from spot to flood.

F/Stop - A rating often applied to scrims used in the film and video industries on their ability to dim light. This rating is directly related to a camera's ability to allow for the admittance of light.

Full Scrim - A metal scrim whose screen occupies the complete frame.

Fuse - An electrical device designed to open a circuit automatically on a predetermined overcurrent. Some fuses automatically close when the overcurrent no longer exists, but most do not.

G

Gaffer - A term used by professional film and video industry lighting people to refer to someone overseeing those operating or utilizing luminaires and related equipment, such as electric cables, dimmers, etc.

Gaffer Grip - A large, spring-loaded clamp with serrated or rubber cushioned jaws. It usually has a stud or studs for the attachment of luminaires and grip equipment.

Gaffer's Pole - See the definition of *Operating Pole*.

Gag - An apparatus that comprises two gripheads attached to each other via a common bolt.

Gel (Gelatin, Media) - As used with photographic lights, a strong, flexible, fade-resistant material, used to change the color, amount or quality of light. **Tip:** Blues fade fairly fast.

Guide Number - Guide numbers proclaim the power of strobes. Closest equivalent for Hot-lights, Footcandles, Lux or our f-stop approximations.

H

Hair Light - Light source aimed at the subject's hair to create separation from the background and add sparkle and highlights.

Halation - The distortion that appears around the edge of a sharply focused beam pattern. This effect can be reduced with the aid of a donut.

Half Scrim - A metal scrim whose screen occupies one half of its frame such that the straight edge of the screen is located at the diameter of the frame.

Halogen - The name for a family of gases used in lamps to maintain proper color temperature and to keep the inside wall of the envelope clean.

Hard Edge - A beam pattern edge that is very clear and distinguishable, i.e. one without a fuzzy or blurry perimeter.

Hard Light - 1) Illumination that has a hard edge and produces sharply defined shadows. Often this light is very intense. The quality is more dramatic and controllable, but generally less flattering than Soft Light; often improved with Diffusion. 2) A luminaire that provides such illumination.

Head - 1) A general term for a fresnel spotlight. 2) The part of a follow spot that contains the light source, i.e. not the stand, ballast or interconnect cable. 3) The part of a metal halide luminaire that contains the lamp, i.e. not the ballast or interconnect cable. 4) The part of an ellipsoidal spotlight that contains the reflector, i.e. not the lens barrel or the cap. 5) An abridged version of *Grip Head* or *Ball Head*.

Hertz - A unit of measurement for the Frequency of alternating current, i.e. one cycle per second.

Highboy (Hiboy) - A heavy-duty stand designed to hold luminaires or heavy grip equipment. The stand is equipped with wheels and tall risers, and usually a 1½" receiver and a grip head.

High Key - A lighting style in which the majority of the scene is highly illuminated, usually enhanced by bright costumes and sets. A low

ratio of key plus fill light to fill light lowers the contrast, helping to obtain this effect.

Hollywood Box - A piece of power distribution equipment used in the film and video industries, comprising a metal housing, a means for connecting an electrical supply, and female flush mount connectors and/or bus bars that can be electrically connected to with bus bar lugs, for the purpose of supplying electricity to luminaires. Some are also provided with overcurrent protection.

Hot Lights - Common term for continuous light sources.

Hot Restrike - A term applied to an ignitor that will hot start an arc lamp.

Hot Spot - The spot of light with the highest intensity, ideally located at or near the center of a beam that has been focused for a peak field.

Hot Start - A term used to describe the ignition of a heated arc lamp, i.e. a lamp that has just been electrified.

HMI - Abbreviation for Hydrargyrum (Greek for Mercury) Medium-Arc Iodides. This is a commonly used type of metal halide lamp manufactured by *Osram-Sylvania Corp.* The term *Osram HMI* is trademarked.

HZ - Abbreviation for *Hertz*.

I

Incandescent - A term used to describe a lamp, or a luminaire that utilizes such a lamp, that employs the incandescence of a filament as its light source. Such a lamp was first developed by Thomas Edison (United States) and Joseph Swan (Great Britain), independently, in 1879.

Indirect Lighting - Illumination that falls on an area or subject by reflection, e.g. bounce lighting.

Infrared (IR) - 1) A reference to anything that uses or emits infrared radiation. 2) Electromagnetic radiation hav-

ing a wavelength longer than visible red light but shorter than microwaves, i.e. approximately 750mm to 1mm.

Infrared Light (IR Light) - Although not actually light, this is a commonly used term for *Infrared Radiation*.

Inky - A small fresnel spotlight with a 1.5" to 3" lens diameter, usually 100-250 watts.

Inky Dink - See the definition for *Inky*.

Instant Restart - See the definition for *Hot Restrike*.

Instant Restrike - See the definition for *Hot Restrike*.

Intensity (Light Output) - The "strength" of the incident-light source, independent of the subject's reflectivity.

Inverse Square Law - An equation relating the intensity of a source to the illumination it produces at a given distance squared, i.e. illumination (fc) = Intensity (cd) / Distance² (ft²).

Iodide - A halogen gas used in lamps to maintain proper color temperature and to keep the inside wall of the envelope clean.

IR - Abbreviation for *Infrared*.

Iris - An abridged, but commonly used version of *Iris Diaphragm*.

Iris Diaphragm - An arrangement of thin movable heat-resistant metal plates, i.e. leaves, that form an adjustable circular opening. They are usually placed within an ellipsoidal spotlight or follow spot in order to adjust the diameter of the beam, or in some cases, to mechanically dim the beam.

K

K - 1) Abbreviation for *Kelvin*.

2) An abridged version of *Kilowatt* in the theater, film and video industries.

Kelvin (K) - In the metric system, a graduated scale used to measure temperature with 0° (-273° C) being the total absence of heat (absolute zero). Each degree is the same magnitude as a degree in the centigrade scale.

Key Light - Also "main light" -- The principle source of light which establishes the character of the lighting, including atmosphere and mood. It may suggest a source, like the sun, or a window.

Key Grip - The supervising grip on a production, i.e. the person ultimately responsible for all other grips and grip equipment.

Kicker - A low-angle side-back light that adds a slight glare to the side of the subject.

Kilowatt (kW) - 1000 watts.

L

Lamp - 1) Any light source in a self-contained package, comprising an envelope, filament or electrodes, base, contacts, gas, and any support structures. The source can be of the incandescent, fluorescent, or arc type. 2) Quite often this term is used interchangeably with *Luminaire*, especially in the theater industry. 3) To install a lamp in a luminaire.

Lamp Base - See definition #2 for *Base*.

Lavender - A material used for fabric scrims used in the film and video industries.

Leko - A commonly used term for an ellipsoidal spotlight. Named after its inventors *Levy and Kook*, the names *Leko* and *Lekolite* are trademarked by *Strand Lighting Co.*

Leads - The electric cable(s) or sleeved, insulated wires, attached to a luminaire or piece of power distribution equipment via strain relief, that terminate in a connector for the purpose of providing an electrical connection to the electrical supply or to another luminaire.

Lens - A transparent material, usually glass, shaped to bend light rays as they pass through it. Colored lenses can also be used as color media.

Light - 1) Illumination, i.e. the aspect of radiant energy of which a human observer is aware through a visual sense.

Its electromagnetic radiation has a wavelength longer than ultraviolet radiation but shorter than infrared radiation, i.e. approximately 380mm (violet) to 750mm (red). 2) A term that is often used interchangeably with *Luminaire*.

Light Distribution - The way in which illumination of any color or quantity is spread over a particular background.

Lighting Director - One who is responsible for the execution of the lighting design for a production, and in some instances, may also be the *Lighting Designer*.

Lighting Ratio - The ratio of Key-Light plus Fill, vs Fill-Light only, using an Incident-light Meter. (If the first is 200 footcandles and the second 50, the ratio is 4:1, or a two stop difference.) Optimum and maximum Lighting Ratios depend upon subject matter, mood, media and type of reproduction, as well as personal tastes. In television a timid ratio is 2:1, a dramatic one, 8:1; a maximum one, about 16:1 (4 stops). Film and slides can handle higher ratios than video and printed photos.

Also see *Brightness Ratio*.
Consolation: If it were less confusing, imagine how crowded our craft would be.

Light Meter - Any apparatus used to measure various quantities of light, i.e. color temperature, footcandles, lux, flash etc.

Light Source - Anything that emits light, such as an arc or a filament, or in early stage lighting, the flame of a burning wick or gas.

Light Spill - A general term used to describe any stray light, including light leak.

Location Fresnel - A fresnel spotlight used primarily in non-standard production settings, i.e. locations other than stages or studios. Because portability is generally a concern, they tend to be smaller in size when compared to studio

fresnels of the same wattage.

Long Throw - A term used to describe a luminaire that has an effective intensity at a relatively long distance. This term is very subjective and dependent on the type of luminaire used.

Louver - An opening provided with one or more slanted fixed or movable fins to control the angle of light. (Like venetian blinds for lighting).

Lowboy (Lobby) - A heavy-duty stand designed to hold luminaires or heavy grip equipment. The stand is equipped with wheels and short risers, and a 1½" receiver and a grip head.

Low Key - A lighting style in which the majority of the scene is scarcely illuminated, usually enhanced by shadows and dark costumes and sets. A high ratio of key plus fill light to fill light increases the contrast, helping to obtain this effect.

Lumen - A unit of measurement for *Luminous Flux*.

Lux - A metric unit of measurement for *Illumination*, i.e. 1 lumen per square meter.

M

Main Light - See the definition for *Key Light*.

Magnetic - A term used to describe an apparatus that utilizes a magnetic field to function.

Magnetic Ballast - A ballast that uses a magnetic field to limit electrical current. These types of ballasts generally do not prevent flicker.

Magnetic Transformer - A transformer that uses a magnetic field to convert voltage from one value to another. Simple common magnetic transformers consist of two wire coils wrapped around an iron core, each winding having its own pair of leads, one pair for the application of an input voltage, and the other pair for the output voltage.

Male - A term applied to a connector that contains the pins,

prongs, blades, and/or tabs for insertion into the holes or slots of a female connector. The male connector should never be attached to the line side of a circuit.

Mercury Vapor Lamp - An arc lamp whose gas is primarily mercury vapor.

Metal Halide Lamp - An arc lamp that uses mercury vapor combined with metal halides, that when heated, radiates light with a color temperature of approximately 5500°K.

MFL - A lamp designation that means "medium flood".

Modeling Light - A continuous burning light in the center of a flash unit used to preview the location of the illumination and shadows from the flash burst.

Mogul Base - A lamp base that falls in the larger range of sizes for the type of base in question, i.e. approximately, 1½" diameter for screw and pre-focus type bases, approximately, 1½" post-to-post distance for bi-post bases, and approximately, 1½" prong-to-prong distance for end prong and extended end prong bases.

Muslin - A material used for fabric scrims used in the theater, film and video industries. Also used in the manufacturing of backgrounds.

MR Lamp - A designation for a type of lamp. Originally, this designation meant a lamp with a small, integral, multi-faceted reflector, but has since come to designate a lamp with a small, integral, mirrored reflector. The reflector could be parabolic or ellipsoidal.

Mylar - A type of plastic that can withstand fairly high temperatures used to manufacture color media.

N

Nanometer (nm) - A unit of measurement commonly used for wavelengths of light, equal to 1/1,000,000,000 meters.

Neutral Density Filter - A filter that reduces the intensity of

light without affecting its color.
NFL - A lamp designation that means "narrow flood".

Noise - An abridged version of *Electrical Noise*.

Non-Dim - 1) A term used to describe a circuit that does not pass through a dimmer. 2) A term used to describe a load that is not intended to be connected to a dimmer.

NSP - A lamp designation that means "narrow spot".

O

Open Face - A term used to describe the luminaires that use no lenses.

Operating Pole - A long, light-weight rod with a handle on one end and an attachment on the other for the purpose of adjusting or switching on pole-operated yokes, luminaires, pantographs, etc.

Overhead - A large scrim, diffuser, reflector, or opaque fabric panel, used for dimming, softening, bounce lighting and shading, respectively, with the light source being a luminaire or sunlight. They are usually 12' to 40' square and mounted on stand supported frames.

P

Par - An abridged version of *Par Lamp*, *Par Can*, or *Par Light*.

Parabolic Reflector - A reflector designed to align light rays generally parallel to the axis formed by the point source and the center of the reflector, eventually resulting in a cylindrical-to-wide beam. The reflector has the shape of a paraboloid.

Par-Lamp - A designation for a type of lamp. In this case, one with a parabolic aluminized reflector.

Par-Light - A generally light-weight luminaire that utilizes a PAR lamp. The beam characteristics depend on the type of PAR lamp used.

Pattern - A very thin, heat-resistant metal plate with a design

cut out of its surface. When placed into the aperture of an ellipsoidal spotlight or follow spot via the pattern slot, an illuminated representation of the design is projected.

Pattern Holder - A metal frame with a knob used to place patterns into the pattern slot of a luminaire.

Pattern Rotator - A motorized pattern holder that spins the pattern.

Photometric - A term used to describe anything that involves the measurement of light.

Photometric Data - Measurements of light and its properties.

Photometrics - An abridged version of *Photometric Data*.

Photometry - The science of measuring light and its properties.

Pigeon - A small metal plate with nail-holes and a 5/8" stud attached.

Pigtail - The relatively short electric cable, power cord, or leads on a luminaire or piece of power distribution equipment that may or may not have a connector installed.

Pigtail Connector - A connector that is installed on a pigtail.

Pinspot - A spotlight that has an extremely narrow beam.

Pipe Clamp - A "C" shaped clamp with jaws that attaches onto a pipe and locks with the aid of a bolt, that when tightened, bites into the pipe and locks the clamp in place. It also has a secondary bolt for the attachment of luminaires, distribution equipment, etc.

Plano - A term used to describe a lens side that is perfectly flat.

Plano-Convex Lens - A lens that is plano on one side and convex on the other. These lenses converge light rays passing through them.

Polarizing Filters - Polarizing camera filters can be set to reduce most glare, as well as darken blue skies. Best camera angle: 90° to the source light. Light loss: approximately .2 stops. *Tip:* polarizing gels may be damaged if used close to

high-wattage tungsten lamps.

Pole Cat - In the film and video industries, a spring loaded, adjustable cross bar that when placed between a pair of walls or structures, allows for the attachment of light-weight luminaires or grip equipment.

Pole-Op - An abridged version of *Pole-Operated*.

Pole-Operated - A term used to describe a luminaire, yoke, pantograph, or other apparatus that can be controlled via an operating pole.

Pot - An abridged version of *Potentiometer*.

Potentiometer (Pot) - An electrical component that has the ability to vary the resistance in an electrical circuit. It always has a means for adjustment, such as a knob or handle.

Pyrex - A type of borosilicate glass that can withstand very high temperatures, used for lenses and mirrors. Manufactured by *Corning Glass Co.*, the name *Pyrex* is trademarked.

Q

Quartz - An abridged version of *Fused Quartz*.

Quartz-Halogen - See the definition for *Tungsten-Halogen*.

Quartz-Iodine - A term used to describe a family of tungsten-halogen lamps that use the halogen gas iodine and an envelope made of quartz in their manufacture.

R

Reflector - 1) Generally, anything that causes reflection. 2) A metal or glass apparatus, usually curved in some manner, used in most luminaires for the purpose of directing light rays from a light source. 3) In the film and video industries, a metallic or reflective fabric panel, used for bounce lighting, or simply to redirect light, with the light source being a luminaire or sunlight. They are available in

a variety of sizes and shapes, and materials of varying reflectance.

Reflector Board - A reflector for the film and video industries made out of a solid, light-weight, metallic coated material. One side is usually mirror-like for hard light reflection, and the other side is diffused for bounce lighting.

Refraction - The bending of electromagnetic radiation, such as light or heat, as it passes obliquely from one medium to another of different density.

Reporter Light - A compact, lightweight, hand-held floodlight often used in conjunction with video cameras and often powered by batteries for portability.

Rim Light - 1) Back light that usually refers to illuminating objects, not persons. 2) A luminaire that provides such illumination.

Rocky Mountain Leg - A height adjustable leg on a stand, usually a grip stand.

S

Safety Cable - A steel cable that has a clip on one end and a loop of the other. It is intended to be threaded through a piece of hanging equipment and around a support structure, such as a batten or truss, and then clipped to its loop. It then acts as a safety support should the primary support, such as a pipe clamp or hanging arm, fail.

Safety Screen - A metal wire screen, placed at the front of an open face luminaire, designed to retain large pieces of broken glass should the lamp break.

Sail - The total surface area of an overhead, butterfly, scrim, flag or cutter.

Saturation - The aspect of color that determines the difference from white at a constant hue, i.e. the property of any color that distinguishes it from a gray of the same brightness.

High saturation is one with little or no white light added to the color, like deep red. Low saturation is one with a large amount of white light added to the color, such as light pink.

Scoop - Named for its scoop-like shape, an open face floodlight with a large, diffuse reflector that is essentially the body of the luminaire. The reflector is parabolic, spherical, or ellipsoidal, and is generally made from unpainted aluminum.

Screw Base - A threaded, cylindrical shaped lamp base with a single contact on the bottom. The threaded part of the base holds the lamp into its socket and acts as the second contact.

Scrim - 1) In the theater industry, a thin, gauze-like curtain. When illuminated from the front, it appears opaque, and when illumination is present behind it but not on it, the scrim becomes almost transparent. It can also appear translucent when there is some illumination directly on it, and some illumination present behind it, in the proper proportions. 2) In the film and video industries, a fabric panel, used for dimming, with the light source being a luminaire or sunlight. They are available in variety of sizes and shapes, and materials of varying density. 3) In the film and video industries, a round, framed metal screen, available in various densities, placed on the front of a luminaire to act as a dimmer. They are also available such that only half of the frame is screened, therefore allowing for only a portion of the light to be dimmed. For us, a metal screen used in front of a light to reduce intensity without Diffusion. But thanks to the mystery and magic of show biz, other devices which do diffuse, are also called scrims. *Tip:* If you can see a clear image through the material, there is no diffusion or confusion.

Scrim Set - A set of metal scrims comprising a full double density, half double density, full single density and half single density.

Sealed Beam Lamp - A lamp with an integral light source, reflector and lens, all of which are either sealed within, or are a part of the envelope.

Shutter Blade - A single framing shutter.

Shutters - 1) An abridged version of *Framing Shutters*. 2) A rectangular, metal apparatus that resembles a Venetian blind in form and function, generally used as a mechanical dimmer or blackout mechanism on large spotlights.

Side Light - 1) Illumination of a subject from the side to place the subject in depth. 2) A luminaire that provides such illumination.

Silk - 1) Specifically, a fabric used for linear diffusion material, i.e. it spreads the light linearly. It can be natural China silk or nylon. 2) Generally, a scrim used in the film and video industries made from silk.

Single Ended Lamp - A lamp that has only one base and all of its contacts on the base.

Snoot - A cone-shaped accessory that mounts on the light to confine the beam to a very small spot.

Soft Edge - A beam pattern edge that is not very clear and distinguishable, i.e. one with a fuzzy or blurry perimeter.

Soft Light - 1) Illumination that produces shadows with a soft edge. 2) A luminaire that provides such illumination.

Solid - An opaque panel, usually made of fabric, placed into the beam of a luminaire to block a portion of the beam or the whole beam.

SP - A lamp designation that means "spot".

Specular - A term used to describe a surface that is highly reflective, i.e. mirror-like.

Specular Light - See definition #1 for *Hard Light*.

Spot - 1) An abridged version of

Spot Light. 2) The position of a moveable lamp, lens or pair of lenses on a spotlight that produces the most narrow field angle. 3) To mark a location to which a luminaire is to be focused. 4) A term used to describe a round light pattern.

Spot Light - Generally, any of several types of luminaires capable of emitting a beam pattern that is round, or in some instances, oval in shape, but more specifically this term refers to fresnel spotlights, ellipsoidal spotlights, and follow spots.

Spun Glass - A diffusion material made from glass fibers.

Stand Adapter - An apparatus used for converting one type of mounting hardware attached to a stand, such as a pin to another, such as a receiver.

Striplight - A multi-lamp luminaire with its lamps mounted in a straight row.

Strobe - An abridged version of *Strobelight*.

Strobe Light (Flash) - A luminaire specifically designed to create a strobe effect, usually using an arc lamp as its light source.

Stud - 1) A metal protrusion, generally 3/8", 1/2", 5/8" or 1" in diameter. It is used to mount luminaires and assorted grip equipment, if so equipped, to a receiver. Studs also have wide, circular grooves designed to captivate the tip of the tee-handle or bolt provided with the receiver. This prevents the receiver-stud combination from unintentionally uncoupling, and can also prevent the stud from rotating within. 2) Any threaded metal protrusion used to mount luminaires and assorted grip equipment, if so equipped, via a nut or threaded socket.

Studio Fresnel - A fresnel spotlight used primarily in studios for the film and video industries. Because portability is generally not a concern, they tend to be larger in size when compared to location fresnels of the same wattage.

T

Three-Point Lighting - The standard lighting system of key, fill and back lighting from which all other lighting set-ups evolve.

Transformer (Xformer) - An item that converts voltage from one value to another. There are two basic types, electronic and magnetic, and both come in many configurations.

Translucent - A term used to describe something that transmits light, but scatters light rays such that a clear image cannot be seen through the material.

Transparent - A term used to describe something that transmits light without scattering light rays, such that a clear image can be seen through the material.

Tungsten - An element used to manufacture lamp filaments. It has a melting point of approximately 3400°.

Tungsten-Halogen - A term used to describe a family of lamps that use the halogen gas iodine, an envelope made of quartz, and a filament made of tungsten, in their manufacture.

Tweenie - A 300-650 watt fresnel spotlight.

Twofer - A special power cord that has one male connector electrically connected to two female connectors via two separate cables or sets of sleeved wires.

Two-Pin Base - A lamp base with two narrow, parallel pin shaped contacts protruding from the bottom

U

Ultra-Violet (UV) - 1) A reference to anything that uses or emits ultra-violet radiation. 2) Electromagnetic radiation having a wavelength longer than x-rays but shorter than violet light, i.e. approximately 40nm to 380nm.

UltraViolet Light (UV Light) - Although not actually light, this is a commonly used term for *Ultraviolet Radiation*.

Umbrella - An umbrella made from reflective fabric used for bounce lighting.

Unit - A term that is often used interchangeably with *Luminaire*.

UV - Abbreviation for *Ultraviolet*.

V

Volt (V) - A unit of measurement for *Voltage*.

Voltage (V) - The measure of voltage potential, in volts.

W

Warm Color - Generally, a color that is in the yellow-orange-red range.

Warm Light - Light having a color temperature of approximately 2600°K-3400°K, i.e. yellow-white to red-white.

Wash - An even overall illumination over a large area.

Wash Light - A luminaire used to produce a wash

Watt (W) - A unit of measurement for heat or *Electrical Power*.

Wavelength - The distance, measured in the direction of propagation, of a repetitive electromagnetic wave between two successive points.

X

Xenon - A gas used in some arc lamps that allows for a point source with extremely high luminous intensity and a color temperature of approximately 6200°K.

Y

Y Cable - See the definition of *Twofer*.

Z

Zoom - An abridged version of *Zoom Focus*. Some ellipsoidal spotlights & many follow spots have a zoom focus system.