The LANGUAGE of light

A vocabulary for technicians

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Q: *How many electricians does it take to change a light bulb?*
A: *[illegible]P. It's called a lamp, you idiot.*

It's a really old joke, but it points out one of the biggest problems in lighting or any other technical discipline in the theatre: the difficulty in communicating clearly. What do you call this, what do you mean, where do you want it? It isn't like lighting has some secret language, but it does have a specialized terminology workers should use if they want to be understood.

Part of the difficulty with any language occurs when shortcuts and slang creep in. You can observe this among your friends at school and even in your own family. Colloquialisms are usually quickly adopted and understood in small groups. Problems can arise, though, when you start talking to people outside of your immediate circle. And over time, terms can change into something completely different.

In 2002, a group of entertainment technology experts started meeting as part of what would become the ESTA Foundation. (ESTA stands for Entertainment Services and Technology Association, a trade organization.) The group, ultimately known as the Essential Skills Committee, started putting together a list of terms that they felt every entry-level entertainment technician should know. The overall program is called eSET (Essential Skills for Entertainment Technicians); you can learn more about it at www.eset.net.

A big part of the committee's work deals with identifying specific terminology and the regional jargon that has cropped up over the years—jargon that can create confusion for newcomers and old school electricians alike.

Here's a demonstration: please identify the luminaire on the facing page. Is it:

A. Source Four
B. Leko
C. Ellipsoidal reflector spotlight
D. Profile spot

If you said anything other than ellipsoidal reflector spotlight, you are using non-standard language. That doesn't mean that you can't communicate with others who use the same terms, but there's a good chance that in another high school, university, or Broadway theatre, some other (also likely non-standard) term is used.

Often these variant names of things are based on manufacturer's trademarks. Leko was the company that began manufacturing one of the original ellipsoidal reflector spotlight luminaires in 1933. Source Four is a type of ellipsoidal made by Electronic Theatre Controls. Like Coke and Kleenex, these commercial names converted to common nouns can be reasonably descriptive—indeed, Leko and Source Four are generally accepted as synonyms for ellipsoidal reflector spotlight—but not wholly accurate.

If, by the way, you also stumbled over the term "luminaire," don't feel bad. The eSET committee determined that this was the more correct term to describe a lighting instrument, but like many other terms we use, it takes some time to change.

What follows is a selected vocabulary of terms that are commonly used in stage lighting which you and your peers ought to know. For many of the definitions below I've relied on the eSET database.

Photometric terms

Photometric terms relate to those elements of lighting that are specific to all lighting fixtures. Knowing and understanding these terms will be especially helpful when you are designing lighting for a production.

Beam angle. The portion of a light beam in which its intensity is no less than 50 percent of the maximum output of the light.

Data sheet. Published by the manufacturer, a data sheet for a luminaire will have photometric data such as multiplying factors, peak candela, luminaire weight, and other luminaire-specific information. Synonym: cut sheet.

Degree. Angle of the light projected by a luminaire. The lower the degree, the narrower and more intense the beam of light.

Field angle. Portion of the light beam where lighting intensity falls to 10 percent of the maximum output of the luminaire.

Footcandle. A measurement of lighting intensity. To compute footcandles,

divide the peak candela by the square of the throw.

Multiplying factor. A mathematical value that allows you to compute the diameter of a light beam at a given distance from the luminaire. Multplying factor × throw = beam diameter.

Focal length. The distance from the focal point to the lens of a luminaire. Generally speaking, the greater the focal length, the narrower the light beam and the greater the intensity.

Peak candela. A value, specific to each luminaire, that allows you to compute the maximum output of a light at a given distance.

Throw. Distance from a light to the object or area being lit.

Wattage. Unit of measurement of power consumed. For lighting, it refers to the output of a lamp.

Luminaire terminology

Barn door. Device that attaches to the front of a luminaire that allows for beam-shaping by blocking some of the beam of light.

Bench focus. Mechanism or method to position the lamp within the lamp housing.

C-clamp. A clamp, shaped like the letter C, that is used to attach any item to a pipe.

Color frame. Metal or heat-resistant device that holds the color media in front of a luminaire.

Elliptical reflector flood. Non-lensed luminaire with an elliptical-shaped reflector that produces a wide, diffused wash of light. Synonyms: ERF, scoop.

Ellipsoidal reflector spotlight. Luminaire which projects light via an elliptical reflector and a lens system. Synonyms: ellipsoidal, ERS, Leko, profile, Source Four.

Framing shutters. Found in an ellipsoidal reflector spotlight, framing shutters allow the user to shape the light beam. Synonym: shutters.

Fresnel. Luminaire which projects a soft-focus light via a spherical reflector and a flat, concentric-ringed lens.

Gate. Secondary focal point of an ellipsoidal reflector spotlight, where accessories (gobo, iris, shutters) can shape the light beam.

Lamp. Transparent or translucent glass housing containing a filament and/or gas that produces light when voltage is applied. Synonyms: bottle, bulb, globe, light bulb.

Lamp housing. Where the lamp is installed in a fixture.

Lens tube. The housing of an ellipsoidal reflector spotlight that contains the lens. Some models allow for interchanging of lens tubes.

Luminaire. A complete lighting unit, consisting of a lamp or lamps, together with all the parts that are needed to position and distribute the light and connect to a power supply. Synonyms: can, fixture, instrument, light, light fixture, unit.

Pan bolt. A small bolt through the side of a C-clamp, typically ¼" or ⅜", which tightens down to prevent the clamp from rotating.

PAR can. Luminaire with a PAR (parabolic aluminized reflector) lamp mounted inside. Synonyms: can[illegible]R, par light.

Parallel blade grounded connector. 15- or 20-amp North American standard electrical connector. Synonym: Edison connector.

Pattern. Image or cutout that is inserted into the gate of an ellipsoidal reflector spotlight to project the pattern with the light. Synonym: gobo.

Pattern holder. Metal plate with a heat resistant handle that is used to insert a pattern into the pattern slot of an ellipsoidal reflector spotlight.

Pin connector. Electrical connectors with three split pins or sleeves configured in a rectangular housing. Synonyms: 2P&G, 2PG, Bates, GP, PC, pin plug, stage pin.

Safety cable. Accessory used to back up the primary attachment of the luminaire to the pipe.

Spill. Unwanted light hitting scenery or some other element.

Top hat. An accessory that fits onto the front of a luminaire to reduc[illegible]ill and glare. Synonym: snoot.

Twist lock connector. Round electrical connector with multiple interlocking curved contacts.

Yoke. Metal frame that holds a light-

...ture.
Yoke locking knob. Located on the side(s) of a yoke, allows the user to lock the tilt of a fixture.

Hands-on terms

18" centers. Traditionally, all electrical connections on a batten are 18" apart.
Bench focus. Adjusting the position of a lamp within the lamp housing.
Circuit. Plugging in a light.
Edge. The outside boundary of the light beam as it shines on a surface. Edges are either hard or soft.
Finger tight. Tightening a bolt or nut with your fingers, instead of a wrench.
Flag. Waving your hand in front of a luminaire, while it's turned on, to verify focus.
Focus. Positioning a light so that it shines on the desired position. This can also mean adjusting the light beam so that it produces the desired di...ution.
Hang. Placing a light on a batten, boom, or other position.
Jumper. A short extension cable. Synonym: shortie.
Lamp (re-lamp). Installing a lamp in its housing.
Pull the shutters. Opening the shutters on an ellipsoidal reflector spotlight.
Run the barrel. Moving the barrel of an ellipsoidal reflector spotlight back and forth to attain a desired focus.
Two-fer. Electrical accessory enabling two devices to be plugged into one receptacle.

Color

Color media. Translucent material used to color light. Synonym: color glass, dichroic, gel, roundels.
Cool color. Blue, green, and sometimes lavender color media.
SED curve. Spectral energy distribution curve. A graph showing the varied colors that comprise a specific type of color media.
Saturation. The amount of color in a gel.
Shade. Variation in a cool color.
Tint. Variation in a warm color.
Warm color. Red, amber, yellow, and sometimes lavender color media.

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THERE ARE SOME additional resources for technical theatre terminology, but an internet search reveals surprisingly few. Next to www.eset.net I have only found www.theatrecrafts.com and www.controlbooth.com to have dedicated glossaries of technical terms. Other obvious resources are the glossaries found in theatre textbooks and terms listed on manufacturer websites, but they have a tendency to be fairly specific in their focus or too broad and lacking depth of detail. Regardless of your choice of terminology sources, the important thing is to make sure that you can be understood, and can understand your co-workers. ▼