

Lighting terminology 101

John Black shares some basic terminology to help newcomers get to grips with lighting fixtures

WHEN I AM WORKING WITH NEW

volunteers, one of the first training topics that I cover is basic lighting terminology. It's important for the team to share a common language through which directions can be clearly communicated and tasks can be accomplished efficiently and safely.

In this article, I will define some basic lighting terminology that I cover with my new crew members. This is not a comprehensive list of terminology used in the lighting industry, but rather a set of terms that enables them to begin working with the gear as quickly as possible. Therefore, I begin with terms related to the tools, focusing methods, stage directions and lighting positions. Let's dive in.

Lighting fixtures

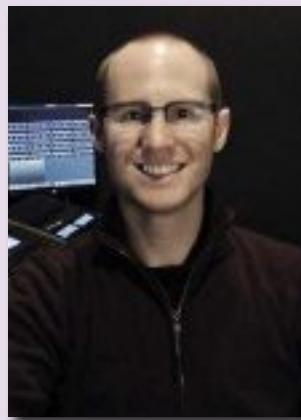
Each house of worship will have a unique lighting package installed and available for use. However, all lighting fixtures can be grouped together based on common characteristics. I split lighting fixtures into two main categories: conventional (non-moving) and automated (moving).

I used to define a conventional fixture as one that had a single controllable parameter, namely intensity (brightness). However, as LED technology has improved and become a popular light source, 'conventional' fixtures now use LED lamps in addition to the traditional tungsten. This has allowed the ability to mix colours without the need for colour filters, as well as the ability to adjust the colour temperature depending on the features of the fixture. Meanwhile, the rest of the fixture features remain unchanged – their focus is fixed. Therefore, I redefined 'conventional fixtures' to be any fixture without pan/tilt features regardless of lamp technology. Some of the most common conventional fixture types are:

Ellipsoidal Reflector Spotlight (ERS or Leko): these fixtures feature an elliptical reflector in the back of the fixture housing, which helps redirect the light from

MEET THE AUTHOR

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John Black, theatre manager for Seoul Foreign School

fixture to narrow or widen the light beam as needed, but it is impossible to produce a 'hard, focused' edge. Accessory holders are available on the front of the fixture for holding barndoors or colour filter frames, among others. These fixtures are used primarily as top or back lighting to provide smooth washes of colour.

Strip light: these fixtures feature a number of lamps lined up in smaller 'compartments' and are similar to cyc lights in that they are designed to produce a broad spread of light. They are used primarily for creating a wash of light typically in a footlight position, but are sometimes used overhead as top or back lighting.

Cyc light: these fixtures also feature a number of lamps and are typically open-faced, meaning they do not use a lens. They are designed specifically to produce a wide vertical spread of



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the lamp through the lens in a way that produces a hard-edged beam of light. These fixtures have swappable lens tubes which allow the user to narrow or widen the light beam as needed. They feature built-in shutter blades, which allow you to shape the light beam, and also feature accessory slots to insert gobos



A Fresnel



PR Lighting's XR 300 Beam in use

(patterns), irises and colour filter frames, among others. These fixtures are used primarily for front lighting, side lighting, projecting patterns and specials.

Fresnel: these fixtures feature a stepped lens, which disperses the light and produces a soft-edged, wide beam of light. Instead of changing lens tubes, the lamp can be shifted forwards and backwards inside the

light to be able to light a cyclorama or backdrop evenly from top to bottom.

An automated fixture is any fixture that is capable of being focused in a new position through programming on the lighting console. These fixtures employ both LED and traditional lamp sources, and often include many programmable features for the lighting designer to use. Automated



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fixtures can be generally grouped into three main categories:

Wash: an automated wash fixture is similar in concept to a Fresnel in that it produces a soft-edged beam of light. These are primarily used to light large areas in colour or to provide wide, even lighting of set pieces.

Profile/spot: an automated profile (or spot) fixture is similar in concept to an ERS in that it produces a hard-edged beam of light. This allows the fixtures to effectively project gobos (patterns) for aerial effects or creating texture. They can be used as specials, washing a stage or for effect, among others.

Beam: an automated beam fixture produces a very narrow, hard-edged beam of light. These fixtures are typically used for aerial effects and are used in large quantities. They are extremely common in concert lighting situations but not so much in theatrical settings.

Fixture accessories

Whether added to an accessory slot of a conventional fixture or built into an automated feature, there are a number of accessories that are important for any lighting crew member to be able to use:

Iris: an iris features a large quantity of shutter blades that are arranged to form a circle. Closing an iris brings the shutters closer together and forms a smaller circle, cutting into the light beam and shrinking the size of the beam of light.

Gobo/pattern: a gobo (or pattern) is a steel cut-out template or glass disc containing an image that is placed into the light beam. The pattern is then projected from the light fixture onto a surface. A pattern holder is used to hold a gobo.

Shutter: a shutter is a blade that cuts into and blocks a portion of the light beam, allowing the user to shape the beam or block it from illuminating unwanted surfaces.

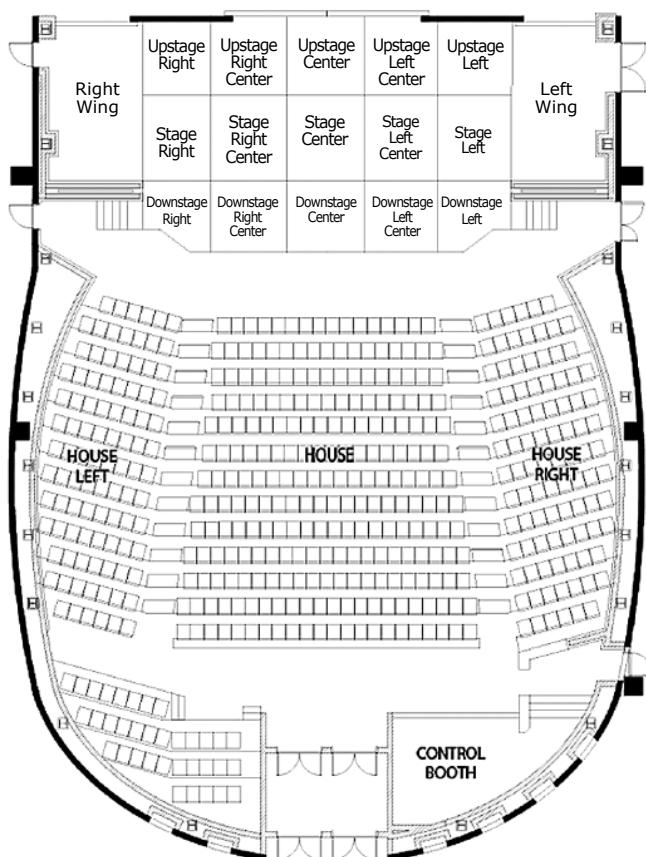
Gel/colour media: a gel is a coloured plastic film placed in the light beam to change the colour of the beam of light. A colour frame is used to hold a piece of gel.

Focus terms

When the lighting crew is involved in a focus session, the following terms will commonly be used to give instruction to the crew member adjusting a fixture:

Pan: to pan a fixture is to rotate it in the horizontal plane (left or right).

Tilt: to tilt a fixture is to rotate it in the vertical place (up or down).



Basic stage directions

Hard focus: to adjust an ERS lens tube to bring the light beam into focus.

Soft focus: to adjust an ERS lens tube to bring the light beam out of focus.

Spot focus: to adjust a Fresnel to bring the light beam into a tighter (smaller) focus.

Wash focus: to adjust a Fresnel to bring the light beam into a wider (larger) focus.

Shutter to here: to adjust the shutters of a fixture to a demonstrated position.

Add colour/iris/pattern: to add the stated accessory to the fixture.

Open iris: to adjust an iris to a larger diameter allowing a larger beam of light.

Close iris: to adjust an iris to a smaller diameter allowing a smaller beam of light.

Lock fixture: to tighten all bolts and handles on the fixture to set its position and prevent further movement.

Stage directions

In addition to focus terms for making adjustments to the fixture itself, it is important for the lighting crew to also know standard stage directions. Often, stage directions will be given as starting points for focusing. It is

important to remember that stage directions are given in reference to an actor facing an audience as opposed to the audience's point of view. For instance, 'stage right' will be to the audience's left.

Lighting positions

The last set of terms that I cover right away are lighting positions. This allows the crew to be able to know where to locate a particular fixture or what its intended purpose is. Each house of worship will have lighting positions installed according to the design of the auditorium. They may label or refer to positions differently as well. However, the following terms are commonly used based on the general purpose for fixtures in that location:

Cyclorama: a cyclorama is a vertical surface at the back of a stage traditionally made of cloth and lit by cyc lights. It provides a background to what is happening on the stage. These days, it is common to see LED videowalls or physical backdrops at the back of a stage, so cyc lighting may or may not be used.

Sidelight: this is a position where light is approaching the subject from the side and can be described as low-sides and high-sides, indicating their vertical positioning. Lighting

from the side helps to model or sculpt a subject.

Backlight/toplight: this is a position where lighting is approaching the subject from directly above or behind a subject and produces highlights on the top of the head and shoulders. These positions will possibly interchange depending on the position placement in your facility. Lighting from the back and/or top helps to draw the subject away from the background and provide depth.

Footlight: this is a position where lighting approaches the subject from the ground and is used to subtly remove any shadows cast by the front lights. If the vertical angle of front lights is too shallow, footlights will not be used. If the vertical angle is too steep, footlights can help remove cast shadows.

Frontlight: this is a position where lighting approaches the subject from the front and is used to illuminate a subject to an audience. Usually the light approaches from a natural angle (close to a 45° vertical and horizontal angle) to prevent shadowing under the brow and chin and create a natural look.

Specials: these are lighting fixtures that have a very specific 'special' purpose related to either an actor,



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an effect or the scenery, for example a custom gobo, a very tight actor spotlight or a wall sconce.

These are the very basics of lighting terminology that I cover with my crews at the beginning. Once they have a firm understanding of these terms, they can comfortably begin working with the fixtures. This then provides the foundation for other terms and principles as they grow in their skills and knowledge of control systems, cabling, programming and lighting design.



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