USITT RP-2 (revision 5), Recommended Practice for Theatrical Lighting Design Graphics

NOW AVAILABLE FOR PUBLIC REVIEW

December 20, 2005

To: **USITT Members**
From: **Lighting Commission Recommended Practices Committee**
Willard Bellman, Rich Dunham (Commissioner), Robin Schraft, Vickie Scott, Steve Shelley and R. Craig Wolf

Several years ago the Vice-President for Commissions and the Standards Committee charged the Lighting Commission with updating the USITT 1991 Lighting Design Graphics Language document. The original document was formulated before the proliferation of CAD programs, intelligent fixtures and the evolution of many non-conventional luminaries. We have now gone through several revisions of the current draft document.

We are pleased to announce that **USITT RP-2 (revision5), Recommended Practice for Theatrical Lighting Graphics** is now available for public review until March 20, 2006. The last draft was sent out to a canvass list and posting through Sightlines and our webpages during this fall with a closing date of October 28th. The responses from this last canvas were helpful and the committee determined to fix a couple of minor issues as well as to address several new technological devices that had been introduced during the time that the canvas was being completed. Therefore, revisions based on that input and committee discussions have been formulated into a fifth canvas that needs to be re-circulated once again. Please scrutinize the document and return the Comments Form that accompanies the canvas document. The Comments Form asks you to do two things: 1-inform the committee if you think that the document can be accepted as a USITT Recommended Practice as it is and if not, 2- indicate to the committee what you think needs to be changed in order to make it an acceptable Recommended Practice. Please be as specific as you can about what to alter: i.e., where (citing the clause and sentence(s) in the clause) and why. For example, a comment such as "Not enough projectors," would only be marginally helpful. A comment such as, "Section 1.4: 6" Diameter Lens Instruments should contain separate symbols for units designated by diameter and focal length (such as 6" x 9") and those designated by beam angle (such as 40°) ", would be more helpful. In addition to citing specific changes and sections of the document you should also give your rationale for the change. Use of "legislative format" that leaves essentially nothing to interpretation is suggested (i.e., strikeout text to be removed and underline text to be added).

A complete public review packet of USITT RP-2, r5 – 12/20/05 includes the copy of the actual draft document, the ballot, a comments document and this letter/instruction sheet. The comments document will provide you with a summary of the comments from the previouis canvas along with the committee's responses. These materials are also available by calling the USITT Office at 800-93USITT or by download through the USITT website at www.usitt.org.

Please send your comments to the address given on the bottom of the comment form or by electronic submission to comments@office.usitt.org. If you submit your comments electronically they will not need to be retyped which will help ensure accuracy. If you are using electronic formats, please place your comments in the body of an e-mail message or mail your comments in a Rich Text Format (RTF) file on a computer disk. Please include your real name and company /organization in your e-mailed message or disk file so that your comments can be easily identified. Finally, be sure to include your e-mail address on the comment form since our responses will be distributed through e-mail. Comments must be received by 5 p.m. Eastern time on March 20, 2006. If you have any questions relating to the process, please feel free to contact Rich Dunham or the national office of USITT.

Contact Rich Dunham: phone 706-542-8273; fax 706-542-2080; e-mail rdunham@uga.edu

Preamble

The original Graphics Standards Board noted that a standard is an example for comparison and an authority, which serves as a model. It should be noted that this model cannot hope to cover all possible situations encountered during the drafting of a light plot or section and thus should be viewed as a guide that theatrical lighting practitioners use to create their drawings. This document, therefore, represents a "recommended practice." The terms *instrument* and *luminaire* are used interchangeably throughout the document to designate lighting luminaries while other equivalent designations may also include *fixture, unit* and *lantern*. This document also does not seek to represent a specific manufacturer of lighting equipment but suggests common instruments in general use. The result is a group of generic instrument types that can be adapted to specific uses as necessary rather than an attempt to present a symbol for each luminaire available.

The purpose of this document is to establish a standardized language among lighting designers and anyone else who needs to understand or execute such a design. In practical terms, this document is intended to provide guidelines so that anyone, ranging from technicians who hang the luminaires to other members of the production team, can clearly understand the intent of the lighting designer.

1.0 Introduction

Legibility and consistency should determine the graphic choices made in the drafting of both CAD and hand-drafted drawings. USITT, or modified ANSI three-line thickness standard drafting practices, may be employed as set forth in the USITT Scenic Design and Technical Production Graphic Standard of 1992 (reissued April 15, 1999). Complex drawings may require the use of three- or four-line thicknesses. Luminaire outlines should take visual precedence over other information on the lighting design drawings.

The graphical representation of a lighting design normally consists of two categories of documents: the Light Plot and the Lighting Section. Preferably, the documents are produced in 1/2" = 1'-0" scale. Other scales, such as 1/4" = 1'-0", 3/8" = 1'-0", 1:25 or 1:50 (if working in SI or metric) may be used after considering the size of the architectural space, the overall size of the document and reproductions, the number of individual luminaries, and the desired legibility of their text and numeric attributes. A complete lighting design requires additional paperwork such as channel hookups and shop orders not addressed in this document. Generally, the light plot should include all information necessary to assure clear understanding of the designer's intentions.

1.1 Special Considerations for CAD drawings

Computer assisted drawings should follow the same recommended practice as those drawn by hand. However, three additional considerations should be made. Layer, class designation, line weight, and color assignment must be coordinated with other members of the production team who are using the same document to create other drawings. This avoids confusion between the draftspersons or the end users. When a lighting graphic symbol is created with "labels," attention must be paid to the relative orientation of both the symbol and its associated text. When a symbol is inserted into a drawing, the associated text should be properly oriented with the rest of the text in the drawing. The luminaire symbols that are included in some computer applications may be specific to various manufacturers' equipment rather than the generic symbols provided in this document. Nevertheless, the size and designation of the luminaires used should follow these generic symbols as closely as possible.

2.0 The Light Plot

The Light Plot is a composite plan drawing that provides the most descriptive possible view of the luminaries so that the production staff can most efficiently execute the design intent. It may consist of more than a single plate; however, all plates should be the same size to facilitate reproduction. Distances between front of house hanging positions and the playing area can be compressed in a light plot.

2.1 Information contained in the Light Plot

Normally, the light plot should include all information necessary to assure clear understanding of the designer's intentions. The location and identification data of every luminaire, accessory, and specialty unit should be represented on the light plot, along with the following information:

- The centerline
- A lineset schedule when appropriate
- A ruler or some other indicator of distance left and right of ceterline in scale
- A ruler indicating on-stage distances up and down stage (or the 90° axis to centerline) in scale
- A drawn representation of the edge of the stage where applicable
- A drawn representation of the edge of the playing area where applicable
- Basic scenic elements
- All scenic masking
- All architectural and scenic obstructions
- The proscenium arch, plaster line, smoke pockets, or other architectural details necessary to orient the lighting design in flexible spaces
- Trim measurements for movable mounting positions should read from the stage level surface (or other common point of reference) to the pipe (or mounting position)
- Trim heights to boom positions measure from bottom of the boom base to the side arm
- Identification (label) of hanging/mounting positions
- The legend or instrument key designating symbol type and notation in the light plot
- The title block (see Section 4)
- Sightlines

Additional information may include:
- Lighting areas
- Template key
- Color key
- Liability disclaimer
- Union stamp

2.2 Luminaire symbol information
The luminaire symbols used on the light plot should represent the approximate size and shape of the luminaires in scale (except where computer applications supply more specific symbols). The symbol should be placed so that its location reflects its exact hanging point. Unless otherwise noted, the default spacing between typical fixed focus luminaries is 18" (or 45 cm) to allow for adequate focus range of each luminaire. When the symbols are placed in relative locations other than the default, dimension lines or other measuring notations should be added between the symbols to indicate the distance and to facilitate mounting the luminaires. It is acceptable to visually orient the angle of each drawn luminaire to either focus points or 90° axes.

Normally, each symbol should be accompanied by the following information:
- Luminaire number
- Indication of focal length or beam spread as part of the symbol (where appropriate)
- Indication of any accessories such as templates, irises, scrollers, top hats, barn doors, etc.
- Channel (or control designation)
- Axis notation for PAR lamps

Additional information may include:
- Focus
- Wattage
- Circuit and/or dimmer number or space for the electrician to add this information
- Indication of "two-fers"
- Color notation
- Color notation for scrollers
- Template notation

2.3.1 Designation and numbering of conventional mounting positions
- Front of House (FOH) positions begin numbering from the position closest to plaster line.
- Onstage electrics number from downstage to upstage.
- Onstage booms number from downstage to upstage.
- All hanging locations not intersecting centerline are subnamed by their location relative to centerline. Ladders, box booms, booms, and such are divided between stage left and stage right; stage left listed first.

2.3.2 Numbering luminaires within conventional mounting positions
Each luminaire receives a unique whole number. If a luminaire has an attachment that alters the beam of an instrument, the attachment will often not receive its own whole number but rather the host instrument's number. Luminaires that are inserted between previously numbered fixtures are assigned the lower luminaire's unit number plus an additional letter (e.g., 3A or 3B). At the designer's discretion, decimal or letter suffixes may also be added to a luminaire's number. In common practice, multi-circuited luminaries such as striplights will be assigned a letter with a corresponding number for each circuit (e.g., A1, A2 and A3 while luminaries with multiple control channels or attributes will often be represented through a whole number designation of the unit number followed by a decimal point and number representing specific attributes for the luminaire (e.g., 23.1, 23.2 and 23.3).
- Luminaires on hanging positions perpendicular to centerline (e.g., battens) are numbered from stage left to stage right.
- Luminaires on onstage booms or other vertical hanging positions are numbered from top to bottom, downstage to upstage.
- Luminaires mounted on FOH positions parallel to centerline should number starting with the units nearest to plaster line.
- Luminaires mounted on FOH positions non-parallel to centerline (box booms) should number starting with the units closest to centerline.

2.3.3 Designation and numbering of mounting positions in non-proscenium venues
- Pipe grid positions should be designated by numbers on one axis of the grid and by letters on the other axis.
- Other atypical mounting positions may be designated by compass points or numbering in a clockwise manner.
- Mounting positions that repeat should be numbered from a consistent starting point.
- Other atypical hanging positions should be designated in a fashion that is sensible to the electricians. Luminaires hung in these positions should be numbered in an intelligible fashion compatible with other luminaire designations on the plot.

3.0 The Lighting Section The Lighting Section is a sectional view in which the cutting plane intersects the theatre, typically along the centerline but may intersect any plane that best illustrates the mounting positions. This drawing provides the most descriptive view of the hanging positions relative to the architectural and scenic elements of the production. While it may be appropriate to compress distance (horizontal or vertical) in a presentational section, doing so in the working version reduces its effectiveness.

3.1 Information contained in the Lighting Section The purpose of the lighting section is to communicate spatial information and relationships of all other elements relative to the lighting design. The following information should be represented on the lighting section:

- Definition of where the section is "cut"
- Stage floor, deck, or "vertical zero" location (indication of which one is being used as reference zero)
- Proscenium, plaster line, smoke pocket, or the "horizontal zero" location
- Back wall or upstage limitation of the performing space
- Vertical audience sight points and/or sightlines
- Downstage edge of stage floor and/or edge of playing area
- Architectural details necessary to orient the lighting design in non-proscenium spaces
- All hanging positions including side elevation of booms, ladders, etc.
- Trim height for all hanging positions that can change height
- Identification of all lighting positions
- Architectural and scenic obstructions
- Sectional view of scenery
- All masking
- Title block (See Section 4)
- Scaled representation of the luminaire that determines batten height mounted in each position.
- Human figure (or "head height") in scale

Additional information may include:
- Vertical ruler in scale
- Horizontal ruler in scale
- Defined distance to other elements not shown on the drawing (to follow spot booth, other sightlines, etc.)
- Liability disclaimer
- Union stamp

4.0 Title Block
Acceptable locations for the title block are:
- Lower right hand corner of the drawing
- Vertical banner on the right side of the drawing

4.1 Information contained in the title block
To be placed in the order deemed most important by the lighting designer:
- Name of the producing organization
- Name of the production
- Name of the venue
- Drawing title
- Drawing number (i.e., "1 of 4")
- Predominant scale of the drawing
- Date the plate was drafted
- Designer of the production
- Draftsperson of the drawing

Additional information may include:
- Location of the venue
- Director of the production
- Other members of the production team
- Lighting assistant and/or Master Electrician
- Date and revision number
- Approval of the drawing
- Contact information (telephone and fax numbers, e-mail addresses)

5.0 Legend or Instrument Key
Placement is acceptable in any location that does not conflict with other information.

5.1 Information contained in the legend or instrument key:
- Pictorial representations (symbols) of all luminaires and devices shown on the plot with identifying descriptions of each.
- Beam spread (in degrees or focal length) for each luminaire type if the numeric value is not part of the luminaire's name
- Designation of all notations associated with each luminaire.
- Color manufacturer designation (e.g., R = Rosco, L = Lee, G = Gam, etc.)
- Template manufacturer designation (when applicable)
- Wattage (total luminaire load) and/or ANSI lamp code
- Symbols for any accessories – templates, irises, color scrollers, top hats, barn doors, etc.

Additional information may include:
- Luminaire manufacturer • Representation of "two-fers"
- Indication of voltage

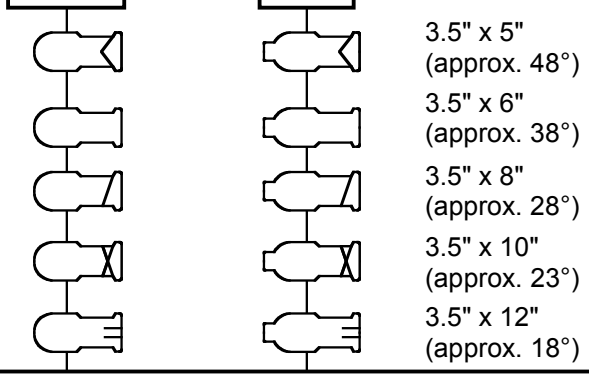
6.0 Symbol Guidelines
These guidelines represent a selection of standard generic symbols that approximate the size and shape of stage luminaires. Further differentiation or notation may be necessary to distinguish between luminaires of approximately the same size. This may include shading the symbol, making the "front" of the symbol a heavier line, and other individual techniques. As manufacturers introduce new luminaries and accessories that are not specified by the current Recommended Practice, a designer may either create new symbols or make variations in existing symbols that approximate the silhouettes and optical qualities of the new equipment. In this case, a clear indication of the new symbol must be included within the Instrument Key. Detailed luminaire symbols specific to each manufacturers' products and supplied by computer drafting programs may be substituted, provided they allow the specialized markings needed to exactly specify the luminaire and provided they are properly explained by the instrument key (see Section 5).

These symbols are presented as a guideline. Specific choices should be considered to differentiate between different manufacturers of the same type of luminaire. It is USITT policy not to specify any manufacturers in the Symbol Guidelines.

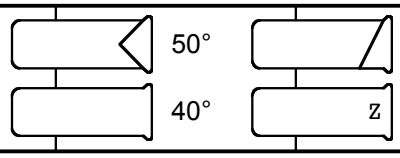
Because of the number and complexity of attributes in automated fixtures, each designer must determine a logical notation system for the luminaire used.

6.1 Ellipsoidal Reflector Spotlights

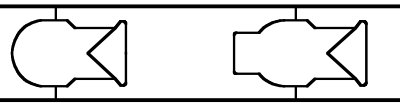
6.1.1 3.5" Diameter Lens Instruments



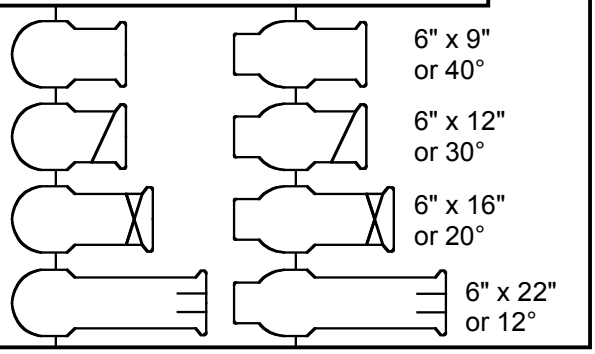
6.1.2 4.5" Diameter Lens Box Shape Instruments



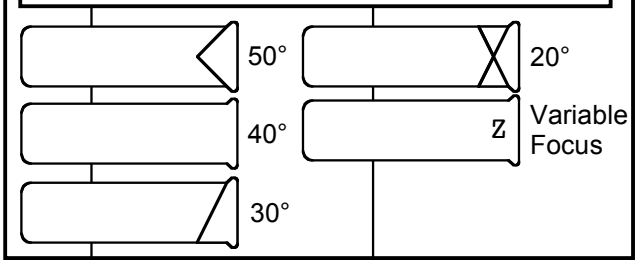
6.1.3 4.5" Diameter Lens Instruments



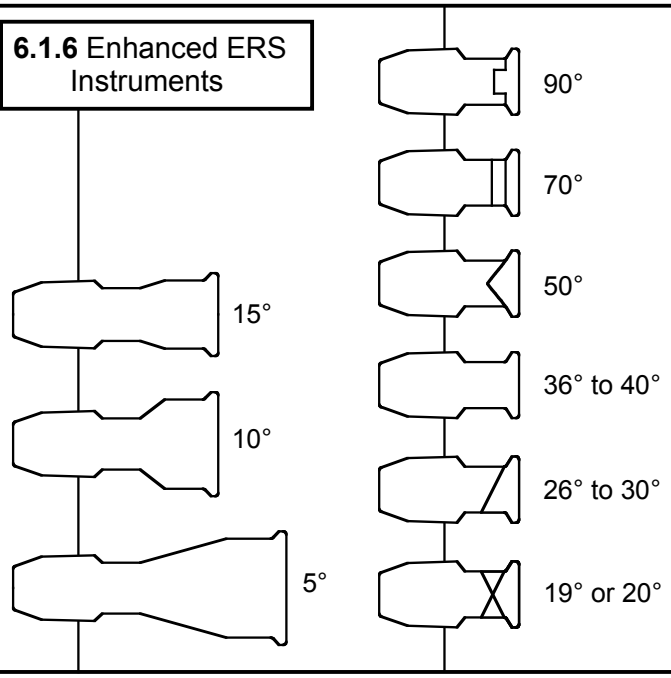
6.1.4 6" Diameter Lens Instruments



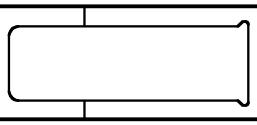
6.1.5 6" Diameter Lens Box Shape Instruments



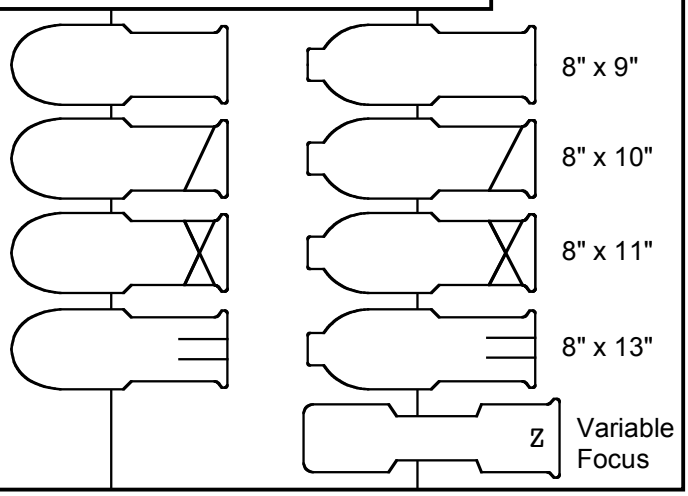
6.1.6 Enhanced ERS Instruments



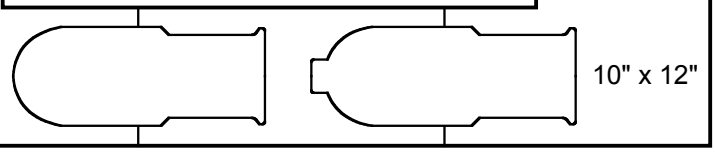
6.1.7 8" Diameter Lens Box Shape Instruments



6.1.8 8" Diameter Lens Instruments

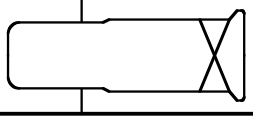


6.1.9 10" Diameter Lens Instruments

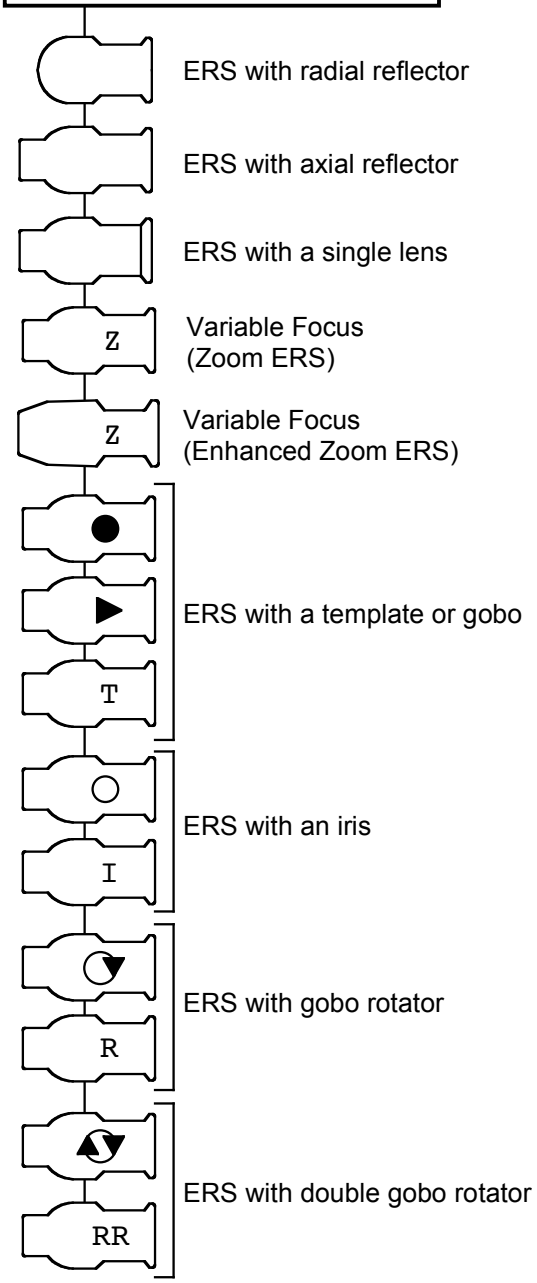


6.1 Ellipsoidal Reflector Spotlights

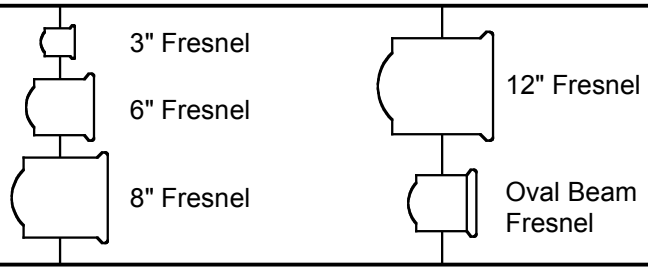
6.1.10 10" Diameter Lens Box Shape Instrument



6.1.11 Variations on Standard ERS Symbols

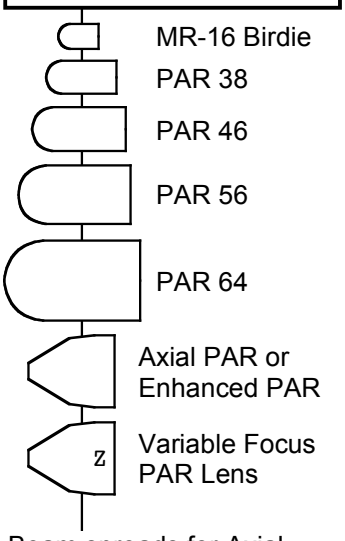


6.2 Fresnel Lens Instruments



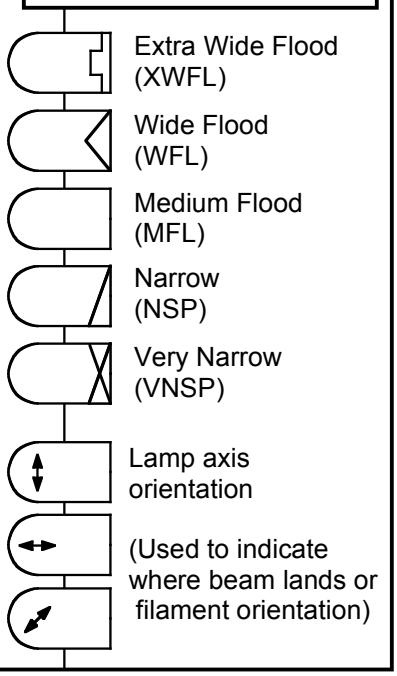
6.3 PAR Lamp Instruments & Designations

6.3.1 PAR Instruments

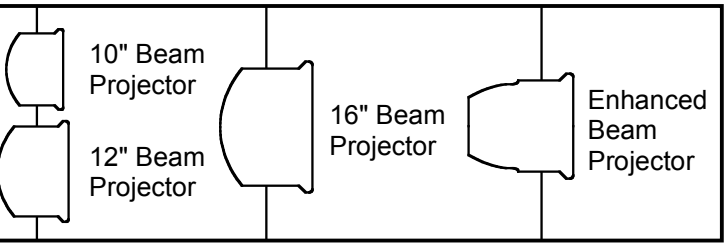


Beam spreads for Axial, Enhanced, or multiple PARs use the designations shown for PAR 64 examples.

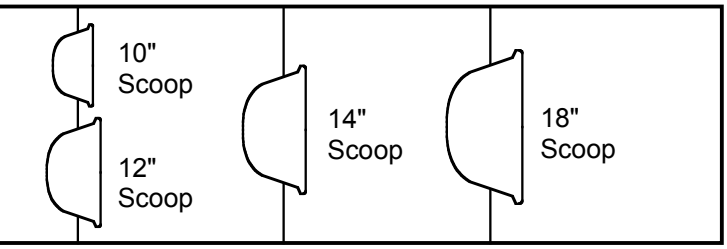
6.3.2 PAR Designations



6.4 Beam Projector Instruments

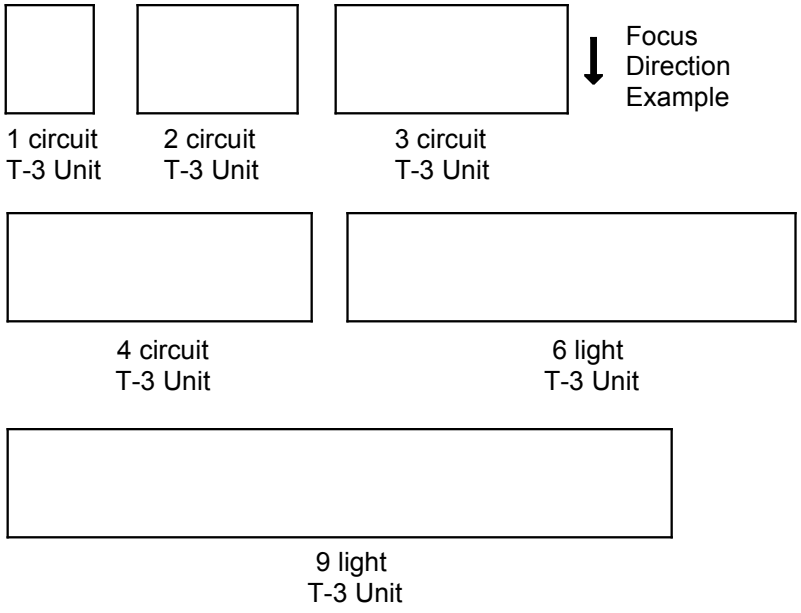


6.5 Ellipsoidal Reflector Floodlights

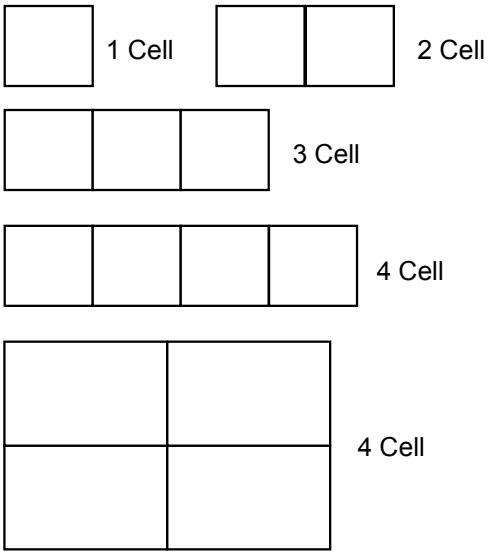


6.6 Cyclorama Instruments

6.6.1 T-3 Cyclorama Instruments



6.6.2 Cyclorama Instruments

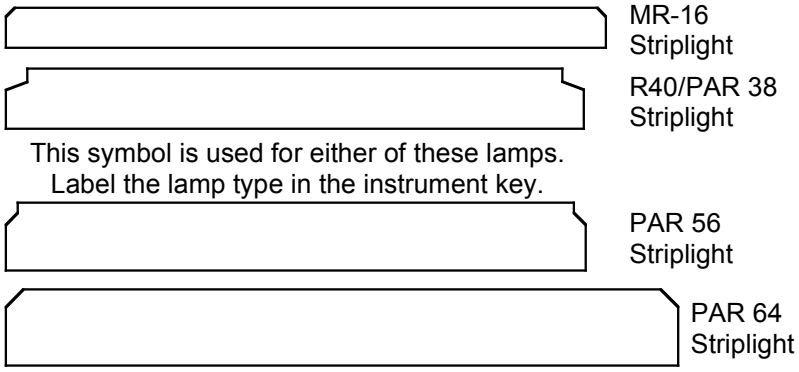


The symbol for multiple cyclorama instruments approximate an accurate size & shape.

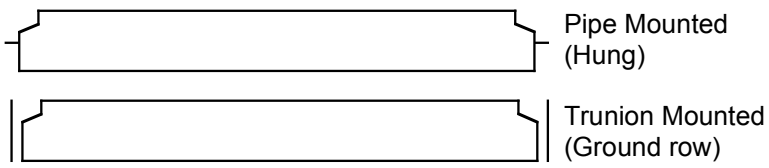
6.7 Striplight Instruments & Mounting Designations

6.7.1 Striplight Instruments

Overall length of the instrument dependent on number of lamps. Measure the instruments.



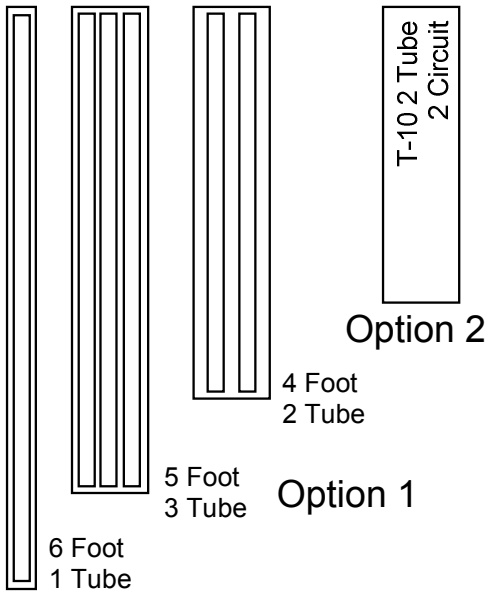
6.7.2 Striplight Mounting Designations



6.7.3 Fluorescent Instruments

6.7.3 Fluorescent Instruments

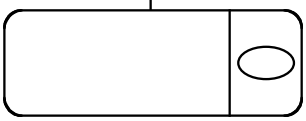
Overall size of the instrument dependent on size and number of tubes. Number of circuits vary per unit. Be specific.



6.8 Automated Luminaires

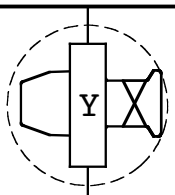
Symbols for Automated Luminaires should approximate size, shape, and swing radius.

6.8.1 Fixed Bodies

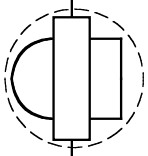


Moving mirror instrument

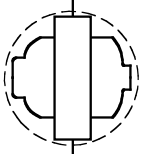
6.8.2 Moving Yokes & Heads



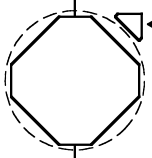
Moving Yoke (Shown with Enhanced 19°)



Moving Head Wash Luminaire

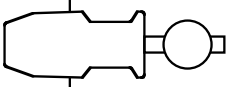


Moving Head Spot Luminaire



Zero Reference Point as specified by Designer

Moving Head Spot Luminaire



External Moving Mirror Device

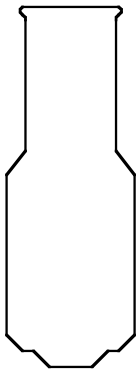
6.9 Practicals & Special Units

Practical Luminaire

35 mm Slide Projector

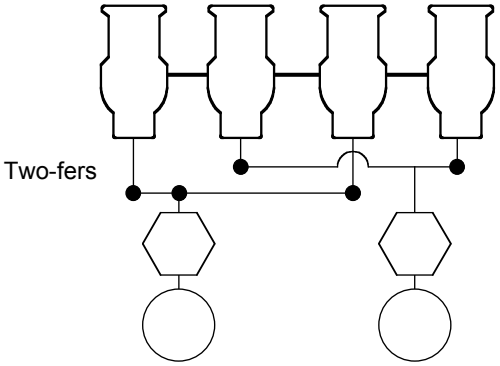
The symbol for Special Effects instruments approximates an accurate size & shape.

6.10 Follow Spot



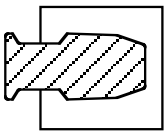
Follow Spot

6.11 Symbols for Circuitry

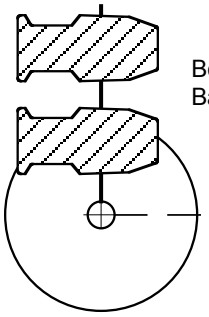


6.12 Symbols and Layout for Lighting Booms

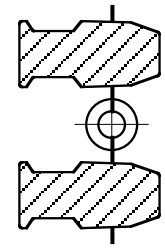
Hatch or shade acceptable for top view of boom



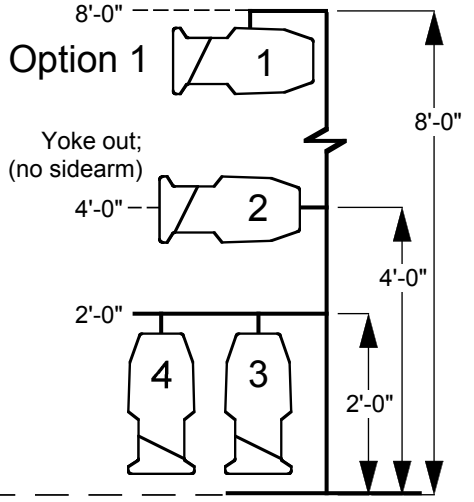
Floor Plate



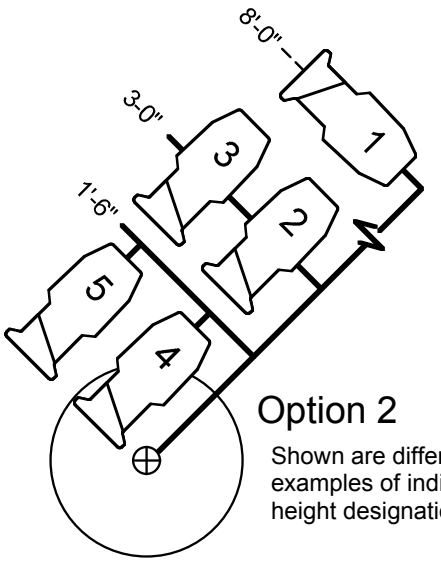
Boom Base



Flange Mount



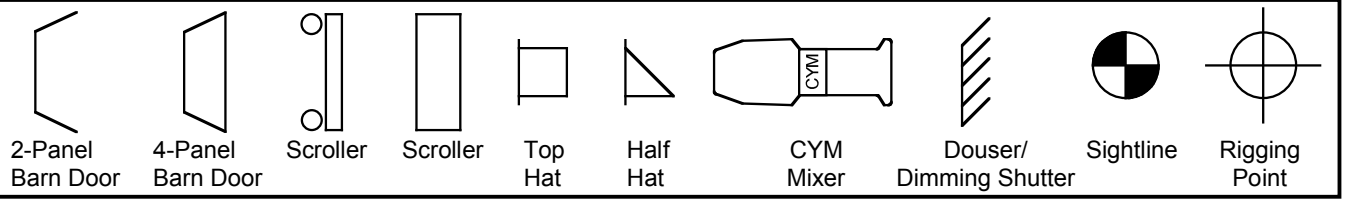
- Layouts may not be to scale
- Choose only one type of layout per plot



Option 2

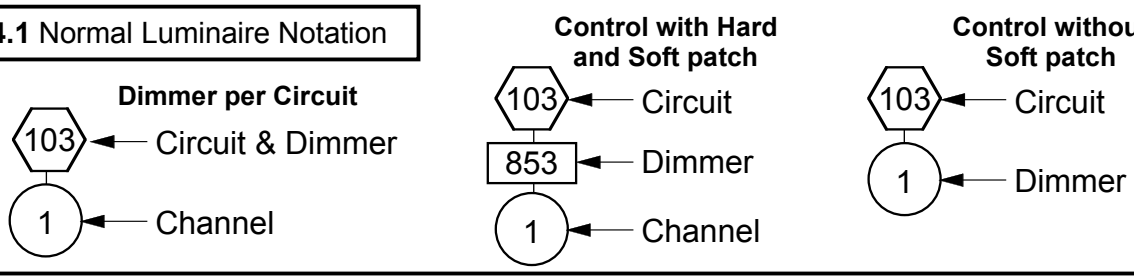
Shown are different examples of indicating height designation

6.13 Accessory & Ancillary Symbols

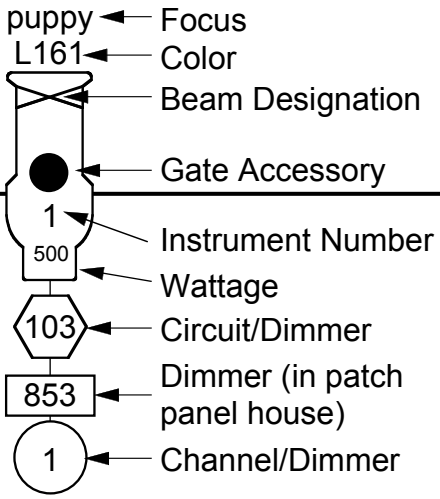


6.14 Luminaire Notation

6.14.1 Normal Luminaire Notation

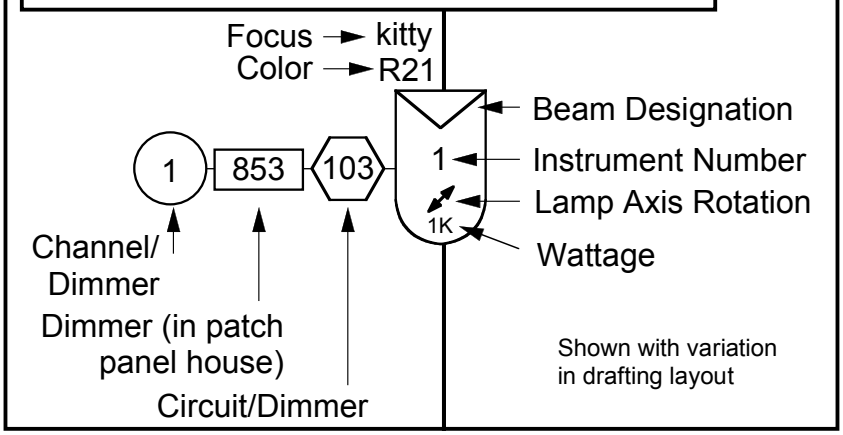


6.14.2 Normal Luminaire Notation

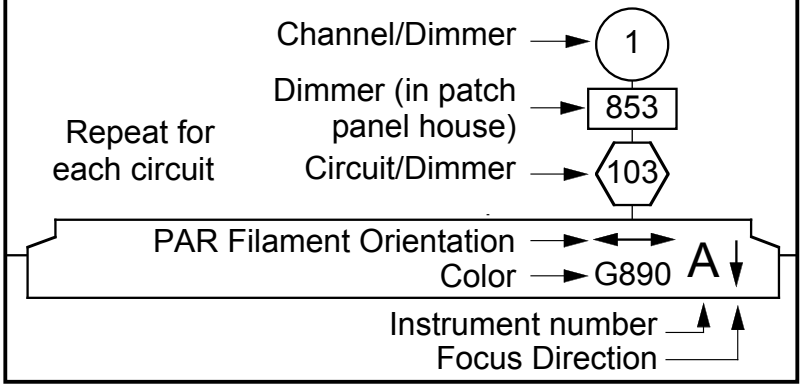


Notation shown on any plot is a case-by-case basis. It is not necessary to include all categories, when the combination runs the risk of making the plot's appearance cluttered.

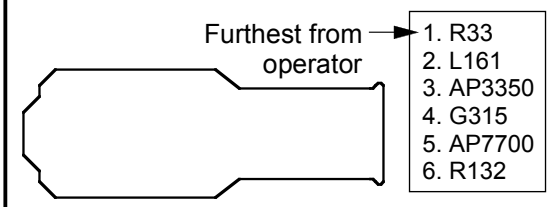
6.14.4 Notation for Instruments with PAR Lamps



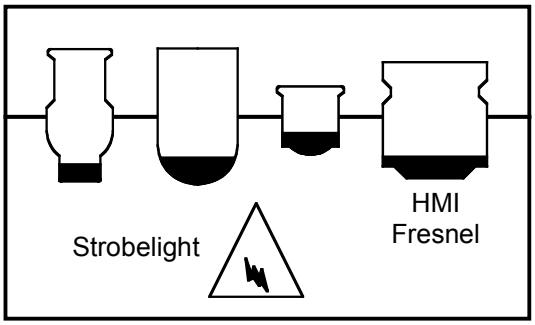
6.14.3 Normal Striplight and Cyclorama Light Notation



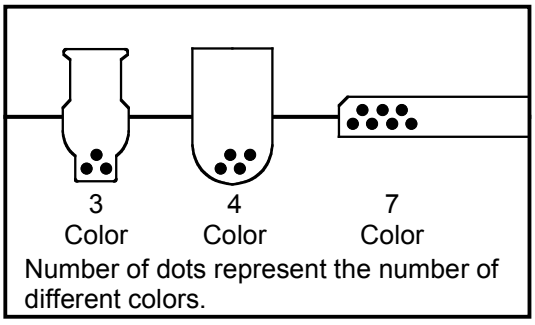
6.14.5 Notation for Followspot Boomerang



6.15 Arc Source Luminaires

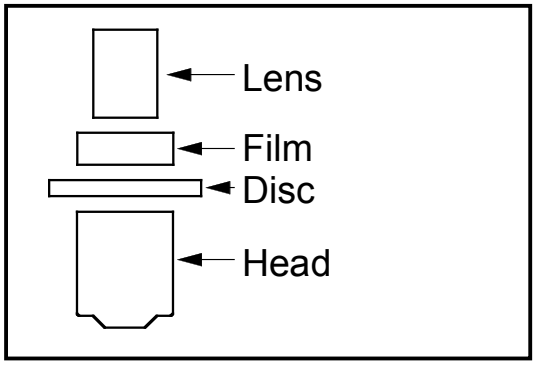


6.16 LED Fixtures



Number of dots represent the number of different colors.

6.17 Scene Machine



6.18 Line Weights

Lightweight	Medium	Heavy
Scenery	Masking	Batten
Leader Lines	Drops	Luminaire
1'-3" Dimension	Center Line	Architecture
	Plaster line	Drawing Border
		Title Block Border