

**Minutes**  
**Photometrics Working Group**  
Rio Suite Hotel  
Las Vegas, NV  
October 25, 1997

Committee chair: Daniel K. Haydt, Remote Source Lighting International

Recording secretary: Karl Ruling

People attending: Thomas Tyler, Altman Stage Lighting, Principal  
Rick Loudenburg, Barbizon Rockies, Principal  
Ronald G. Mink, Electronic Theatre Controls, Alternate (joined at this meeting)  
Gregg Esakoff, Electronic Theatre Controls, Principal  
Jim McHugh, Humboldt State University/IES, Principal  
Bill Klages, New Klages Inc., Principal  
Ken Vannice, NSI Corporation, Principal  
Tim Hansen, Oasis Stage Werks, Principal  
Tony Douglas-Beveridge, PLASA, Principal  
Ron Rykowski, Radiant Imaging, Inc., Principal  
Mitch Hefter, Rosco/Entertainment Technology, Principal  
David E. Anderson, Strand Lighting Ltd., Principal  
Jerry Gorrell, Theatre Safety Programs, Principal  
Larry Lieberman, Vision Quest Lighting, Principal

1 Opening Remarks

The meeting was called to order by Danny Haydt at 9:11 AM

2 Attendance and membership

2.1 Introductions of those present

The people attending introduced themselves.

2.2 Determination of quorum (8 needed)

There were 14 voting members present, so the requirement for a quorum was met.

2.3 Recognition of alternate voting members

2.2 Requirements for membership

2.3 Processing of new membership requests

Ronald Mink applied for membership as an alternate for ETC. Mitch Hefter moved to accept him. Tim Hansen seconded. Unanimous.

3 Approval of the minutes from the previous meeting

Glen Cunningham was not able to attend the meeting, but had submitted a letter pointing to inaccuracies in his comments at the last meeting as recorded. The minutes as written read:

"Cunningham asked if requiring a cosine curve distribution on a spec sheet could be considered a restraint of trade, since some manufacturers have products that do not perform as well as others when adjusted for this distribution."

Cunningham said it should read:

"Cunningham asked if requiring a specific distribution curve on a spec sheet could be considered a restraint of trade, since some manufacturers' products may not be designed to perform as well as others when adjusted for that distribution."

Tim Hansen moved to accept the minutes with the changed wording. Tom Tyler seconded. Unanimous.

#### 4 Call for patents

"ESTA intends to publish no standard that contains protected intellectual property, unless that property can be licensed by anyone for a reasonable fee. ESTA uses a process of open patent disclosure to implement this intent. ESTA does not conduct patent searches and does not warrant that its standards contain no protected intellectual property. "

"In keeping with the open disclosure policy, I ask if anyone present wishes to notify the working group of the existence of a patent or copyright that might protect material in a standard being developed by the working group. You need not be the holder of the patent or copyright in order to notify the working group of its existence."

#### and Anti-Trust Statement

"The ESTA Board of Directors, the Technical Standards Committee, and the leadership of this Working Group will reject or nullify any actions that restraint trade. Anyone who feels that an action restraining trade is being or has been taken is requested to bring the matter to the attention of the chair immediately. Anyone who feels that actions in restraint of trade have been taken and not properly annulled is requested to notify the TSC chair or ESTA president immediately."

"ESTA legal counsel has informed us that any member of this working group may be found individually liable for any action that restrains trade taken by this working group. An individual convicted of a violation of the Sherman Act may be fined as much as \$100,000 and be imprisoned for up to three years. An easy to read pamphlet describing restraint of trade is available from the Technical Standards Committee."

Danny Haydt directed the group to read and heed the above statements of ESTA policy.

#### 5 Approval of agenda

Jim McHugh moved to accept the agenda. Jerry Gorrell seconded. Unanimous.

#### 6 Task group reports

##### 6.1 Nutrition Label task group: Larry Lieberman, Gregg Esakoff, Tom Tyler, Glen Cunningham (head), Danny Haydt, Rick Loudenburg

The working group meeting turned into a task group meeting with a free discussion of the draft E1.9 document. The following are the recommendations made by the members of the working group to the task group. No formal votes were taken on the document.

It was noted that it is now ESTA policy to use SI units in our standards. Customary units will be used only when no appropriate SI equivalent exists. Thus, this standard will use lux, meters, and kilograms rather than footcandles, feet, and pounds.

Bill Klages suggested that we should keep in mind that the most common test of a lighting instrument is to shine it on a white wall and look at the illumination. Out of this recommendation, which was strongly supported by the group, came the idea to abandon the candlepower distribution graphs in 3.2 in which candlepower is plotted as a function of degrees of spread. Instead, we should use isolux graphs. For farfield instruments the isolux graph should be for a diameter of 2.5 meters (assuming a circular area of illumination). Different throws would be needed for instruments of different field angles. The isolux contours would be drawn in 10% increments with the center illumination level taken as 100%. For instruments that are actually brighter just off the center, such as a fresnel at full flood, this may mean lux levels above 100% in some parts of the graph. The isolux contour lines would be labeled in lux, and not percentages. Throw distances should be measured from the last aperture.

For nearfield instruments we should use isolux graphs in 3.3. The throws should be described much as they are described now. The center of the isolux graph should be the physical center of the area the manufacturer says the instrument is designed to light.

It would be helpful if the standard had some sample isolux graphs in an appendix.

There should be a paragraph 4.10 that would require the manufacturer to explain how the photometric data was gathered.

Definitions 2.1 through 2.4 need to be consistent in language, and the terms should be redefined in terms of illuminance. This will require new names so our half-illuminance will not be confused with the IESNA's half-candlepower beam angle.

Definition 2.5: "...the best sharp focus across the field"

Definition 2.8: "... a diffused image across the field."

Definition 2.9: Measure from the exit lens or the last active, beam-shaping optical element.

The group was not certain that curves at soft focus specified in 3.2.1.2 are that useful.

In general, this document requires a lot of distribution curves. The task group should look at getting rid of some of the multiple curves, and simply require the manufacturer to give curves that are the manufacturer's best shot.

We don't need 3.2.1.4. The isolux curves cover this.

In 3.3.1.4 get rid of the idea of indicating single cells. Show how the units are intended to be used.

Regarding the conversion factors for alternate lamps in 4.3: You can't scale lumens. You have to test and report on each alternate lamp.

4.4 and 4.5 are not that useful. Delete.

The physical dimensions and weight in 4.6 should not be optional.

4.7 Color frame size should not be optional. Gel cut size is optional.

Pattern size is a good thing to know, too.

Larry Lieberman wants better definition of size of an instrument.

4.8 "Ballast design parameters" is inaccurate. "Ballast specifications" would be a better expression.

Need to add working angles.

Need to add maximum ambient temperatures and safe front and rear working distances.

6.2 Explanation of IES photometric procedure as it exists: Bill Klages (head), Anne Valentino, Ron Rykowski

No report.

Ron Rykowski said he should not be part of this group, but should be part of the Fix the IES Procedures Group.

6.3 Fix IES procedures: Lee Bloch (head), Jody Good, Jim Grosh, Gregg Esakoff

Jim McHugh briefly reported that the IES testing group is favorably disposed toward revisiting theatrical luminaire testing.

7 Other business

Task group reshuffling:

Add Ron Mink to the Nutrition Label Group and the Fix IES Procedures Group.

Larry Lieberman joins the Fix Group.

Ron Rykowski joins the Fix Group and is out of the Explanation Group.

8 Schedule for future meetings

The working group will meet at the Dallas/Ft. Worth Marriott Hotel in Irving, Texas, Saturday, January 24, 1998, from 7:00 p.m. until 11:00 p.m.

9 Adjournment

Jim McHugh moved to adjourn, and Rick Loudenburg seconded.

The meeting was adjourned at 12:08 PM