

Minutes
Photometrics Working Group
22 January 2000
Dallas/Ft. Worth Marriott
Irving, Texas

Chair: Thomas Tyler; Lighting & Electronics, Inc.; Principal; Producer

Recording secretary: Karl G. Ruling, ESTA

Members attending: John Luk; Altman Stage Lighting; Principal; Producer
Rick Loudenburg; Barbizon Rockies (Barbizon Companies); Principal; Gen. Interest
Ken Vannice; NSI Corporation (Leviton Manufacturing Co., Inc.); Principal; Producer
Tim Hansen; Oasis Stage Werks; Principal; User
Tim Cox; PLASA; Principal; Gen. Interest
David Jenkins; Radiant Imaging, Inc.; Principal; Gen. Interest (joined at this meeting)
Jerry Gorrell; Theatre Safety Programs; Principal; User

1 Opening Remarks

Tom Tyler called the meeting to order at 13:30. The formal start of the meeting was delayed waiting for people to arrive from lunch, they having been delayed by the late recess of the morning's Control Protocols Working Group meeting.

2 Attendance and membership

2.1 Introductions of those present

Tyler asked people to introduce themselves, which they did, proceeding clockwise around the table.

2.2 Determination of quorum (7 needed for quorum, 11 for supermajority)

Tyler announced that a quorum was present.

2.3 Recognition of alternate voting members

None were present to be recognized.

2.4 Requirements for membership

Tyler reminded those attending that if a voting member misses three meetings in a row, they are moved to observer status. This will be done at the end of the third meeting missed.

2.5 Processing of new membership requests

Tyler transferred chairing the meeting to Karl G. Ruling so Tyler could vote freely.

David Jenkins of Radiant Imaging had applied as a principal member, general interest category. His election as principal would make Ron Rykowski the alternate. Tyler moved that his application be accepted. The motion was seconded. By show of hands, the motion was unanimously accepted.

A.C. Hickox of Domingo Gonzalez Associates had applied as an observer member in the user interest category. Tyler moved that her application be accepted. The motion was seconded. By show of hands, the motion was unanimously accepted.

Ruling transferred chairing the meeting back to Tyler.

3 Approval of the minutes from the previous meeting

Tim Cox moved that the draft minutes of the previous meeting be approved without amendment. The motion was seconded. The motion was accepted unanimously on a voice vote.

4 Call for patents

Tyler read the following:

"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."

No patent issues or other intellectual property issues were identified by the group.

Tyler then read the 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 restrain 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."

No one present identified any anti-trust issues.

5 Approval of agenda

Jerry Gorrell moved that the draft agenda be approved. The motion was seconded. The motion was accepted unanimously on a voice vote.

6 Task group reports

6.1 Report on how photometrics are currently done

No report.

6.2 IES testing RP update

Jerry Gorrell reported that he had met with Jody Good and a chief member of the IES testing subcommittee at the Lighting Sciences facility in Scottsdale. They have an ambitious schedule which should give us results by the end of this year or early next year. It was a valuable trip.

Tim Hansen asked John Luk to send him an Altman focussing cyc. Tim and Jody will figure out how Lighting Sciences might note the focus.

Rick Loudenburg reminded us that we should not forget unusual luminaires such as the Color Kinetics luminaires. The consensus was that it would be better not to push testing methods for those instruments at this time, but that they should not be forgotten.

6.3 Nutrition Label task group

6.3.1 Discuss revised E1.9 document

The working group went into task group mode. The document was discussed and edited. (Please see Karl Ruling's informal notes at the end of these minutes as to what was changed and why.) The intent of the editing was not to add or delete requirements, but to make editorial changes for clarity and to take care of some technical problems.

6.3.2 Decide what to do with revised E1.9 document

Tim Hansen moved that the document as edited be sent to public review. Tim Cox seconded. The vote shall be by letter ballot because a supermajority was not present at the meeting.

7 Other business

None.

8 Schedule for future meetings

Tyler announced that the next meeting would be Saturday, March 25, 2000 from 1:00 to 5:00 p.m. at the Adam's Mark Hotel.

9 Adjournment

Jerry Gorrell moved the meeting adjourn, and everyone seconded the motion. Tyler declared the meeting adjourned at 16:45.

Working Group Membership at End of the 22 January 2000 Meeting

Name	Company	Parent Co./Org Represented	Vot. Stat.	Int. Cat.
Andre Broucke	ADB - TTV Technologies	Siemens	O	P
John Luk	Altman Stage Lighting	Altman Stage Lighting	P	P
Rick Loudenburg	Barbizon Rockies	Barbizon Companies	P	G
Lee J. Bloch	Bloch Design Group Inc.	Bloch Design Group Inc.	P	U
Ed Hyatt	Boston Illumination Group, Inc.	Boston Illumination Group	P	P
Bill Ellis	Candela Controls, Inc.	Candela Controls, Inc.	O	U
Angelo Cavenati	Clay Paky S.P.A.	Clay Paky S.P.A.	P	P
Francesco Romagnoli	Clay Paky S.P.A.	Clay Paky S.P.A.	A	P
David Bertenshaw	David Bertenshaw	David Bertenshaw	O	P
A C Hickox	Domingo Gonzalez Associates	Domingo Gonzalez Associates	O	U
Ronald G. Mink	Electronic Theatre Controls	Electronic Theatre Controls, Inc.	A	P
Gregg Esakoff	ETC West	Electronic Theatre Controls, Inc.	P	P
Mike Wood	High End Systems	High End Systems	O	P
Jim McHugh	Humboldt State University/IES	Humboldt State University	P	U
Edwin S. Kramer	IATSE, Local 1	I.A.T.S.E. Local 1	P	U

Name	Company	Parent Co./Org Represented	Vot. Stat.	Int. Cat.
Jim Grosh	Jim Grosh Associates	Jim Grosh Associates	P	G
Thomas Tyler	Lighting & Electronics, Inc.	Lighting & Electronics, Inc.	P	P
Hiroshi Kita	Marumo Electric Co., Ltd.	Marumo Electric Co., Ltd.	O	P
Tom Pincu	Moodie, Pincu & Associates, Inc.	Moodie, Pincu & Associates, Inc.	P	P
Bill Klages	New Klages Inc.	New Klages Inc.	P	U
Ken Vannice	NSI Corporation	Leviton Manufacturing Co., Inc.	P	P
Tim Hansen	Oasis Stage Werks	Oasis Stage Werks	P	U
Tim Cox	PLASA	PLASA	P	G
Tony Douglas-Beveridge	PLASA Standards Office	PLASA	A	G
David Jenkins	Radiant Imaging, Inc.	Radiant Imaging, Inc.	P	G
Ron Rykowski	Radiant Imaging, Inc.	Radiant Imaging, Inc.	A	G
Daniel K. Haydt	Remote Source Lighting International	Remote Source Lighting International	P	P
Robert Mumm	Robert Mumm	Robert Mumm	O	G
Mitch Hefter	Rosco/Entertainment Technology	Rosco Laboratories (USITT on CPWG, EPWG)	O	U
Eckart Steffens	SOUNDLIGHT	VPLT	O	G

Name	Company	Parent Co./Org Represented	Vot. Stat.	Int. Cat.
Joseph M. Good, III	Spectrum Professional Services	Spectrum Professional Services	P	G
Milton Davis	Strand Lighting	Strand Lighting Ltd.	A	P
David Steven	Strand Lighting Ltd.	Strand Lighting Ltd.	P	P
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	P	U
Thomas A. Hough	Vari-Lite, Inc.	Vari-Lite, Inc.	O	G
Larry Lieberman	Vision Quest Lighting	Vision Quest Lighting	P	G

Voting Status

- P Principal voting representative for a company or organization
- A Alternate voting representative for a company or organization
- I Individual representing no organization other than himself or herself
- O Observer; non-voting

Interest Categories

- P Producer (manufacturer) of luminaires
- U User of luminaires
- G General interest in luminaires

Karl's Informal Notes on Changes in BSR E1.9 from Photo/1997-5010r6 to Photo/1997-5010r7 and Their Rationales

Title page: The document number, edit date, and copyright are changed because it's a new document, last edited on a different date in a new year.

Header on every page: Different document number.

Definitions section: Resorted and renumbered.

2.1: This is the original 2.4. That definition was changed by adding the word "cutoff" in front of it to help distinguish it from the common notion of field defined by the 10% maximum candlepower angle. This word addition changed the alphabetical sort order. Also the typographical error "of" was corrected to "or."

2.3 (old 2.2): Comma deleted for grammar and clarity.

2.4 (old 2.3): "Predicate" changed to "predict" because "predicate" was the wrong word.

2.6: There was an extended discussion about how defining things in terms of angles becomes difficult when dealing with near-field or large-source luminaires, and instruments that do not have conical beams. Those difficulties would have an impact on this definition and on several of the other requirements in the standard.

The problems are most severe with near-field instruments. With those instruments, the distribution can be different at different throw distances within the near-field range, so near-field instruments would have different half-peak illuminance angles at different working distances.

The use of angles is also messy with instruments that do not have conical beams. For example, the cutoff illuminance angle of an asymmetrical cyc light is not one number but a large set of numbers.

It was decided that what we are trying to describe here in 2.6 is the lumens in the area illuminated to 50% of the maximum and above, and that this measure could be used for both near-field and far-field instruments if we simply described it in terms of illuminance levels, rather than in terms of the angle or angles that bound the area of illumination that concerns us.

2.9: "Throw Multiplier" in the sample graph was changed to "Throw Distance Multiplier" to enhance clarity. "Distance" was also added to the definition of "throw multiplier" in 2.20 to make it "throw distance multiplier," and the definition was renumbered 2.19 because of the deletion of 2.16.

2.16: The definition of "pattern" was cut. The word "gobo" was added in 4.8, so it was felt it was not necessary to define pattern here.

2.16 (old 2.17): "Tenth-peak" was changed to "one-tenth-peak" because it was felt that this was more accurate. We are talking about 1/10th here, and not 2/10ths, 5/10ths, the first tenth, the last tenth, or anything else.

2.17 (old 2.18): "Tenth-peak" was changed to "one-tenth-peak" for the reasons noted above. Also, the area was defined in terms of illuminance levels rather than angles, for the reasons given above with 2.6.

2.19 (old 2.20): "Throw multiplier" changed to "throw distance multiplier" for the reasons noted in 2.9. "Field area" changed to "cutoff field area" for the reasons noted in 2.1.

2.20 (old 2.21): "Total lumen output" was redefined in terms of illuminance level for the reasons given in 2.6.

3.0: The sentence that was under 3.1 was moved to be under 3.0. The argument was that having that sentence under 3.1 meant that only the general requirements were required, which could be interpreted to mean that the requirements in 3.2 and 3.3 were in fact not required. Moving the sentence under the general requirement heading cleared up this confusion.

3.1.7: The wording was changed as in 2.17 for clarity. Also, this requirement points back to the definitions 2.6 and 2.17, which were revised.

3.2.1, first paragraph: Words were added to make it clear that, in general, the instrument is lighting the plane straight on, without the plane being tilted. Instruments that are designed to light a plane at an angle are a special type covered under 3.2.2.8. References to "throw" were changed to "throw distance."

3.2.1, second paragraph: References to "throw" were changed to "throw distance." The language about rounding off the throw distance multipliers was changed because of several problems:

- 1) References to angles does not work well with near-field or non-conical beam luminaires, as described above in reference to 2.6.
- 2) The references to "significant digits" is perhaps more confusing than necessary for some readers. We are trying to limit the number of digits to the right of the decimal point so we don't have excessive levels of precision with throw distance multipliers going down to the thousandths or ten-thousandths, and that can be simply done by explicitly limiting the number of digits to the right of the decimal point.
- 3) The precision specified in terms of significant digits was coarser than intended by the task group that wrote this section. The idea is to keep people from running to ridiculous numbers of digits on the iso-illuminance graphs, but the original wording would have had just one digit right of the decimal point in all cases. Thus, a 10-degree spotlight, which has a cutoff throw multiplier of 0.08748866352592, would have been described with a graph that has all the throw multipliers rounded off to either 0.0 or 0.1, which is not very helpful. Allowing two digits to the right of the decimal point would allow a company to use multipliers such as 0.02, 0.04, 0.06, 0.08, and 0.10, which is far more helpful but not excessively detailed.

3.2.1, formula: "Distance" was added for the reasons cited in 2.9.

3.2.1, final line: The line was moved to below 3.2.2 for clarity.

3.2.2.5: "Cutoff illuminance angle" was changed to "cutoff field area" for the reasons described in regard to 2.6. The language dealing with how to express the deviations in illumination levels was also clarified.

3.2.2.6: As a result of the discussion of the problems with applying requirements that make sense for far-field instruments to near-field instruments, this requirement was changed to apply to far-field instruments. Also, the word "illuminance" was added to the labels to make it clear that these are not candlepower angles, and the order of the labels were changed to match the order of the requirements.

3.2.2.7: The phrase "in an unambiguous manner" was found to be too ambiguous, and was deleted.

3.2.2.8: The language was reworked to make it more clear what is being asked. Also, the ambiguous phrase, "in an unambiguous manner," was deleted.

3.3: Only far-field instruments can be represented with candlepower diagrams, so the requirement was limited to apply only to them.

4.8: "Gobo" was added since this is a common word, and its use makes it unnecessary to define "pattern," which is perhaps not so common. The working group at the January 22, 2000 meeting felt that the use of both words should make this section understandable to English-speakers on both sides of the Atlantic Ocean.