

Minutes
Photometrics Working Group
Friday, 18 October 2002
9:00 - 12:00
Las Vegas Hilton

Chairman: Thomas Tyler; Lighting & Electronics, Inc.; P; P
Co-Chairman: Jerry Gorrell; Theatre Safety Programs; P; U

Recording secretary: Karl G. Ruling; ESTA

Members attending: John T. Ryan; Altman Stage Lighting; P; P (joined at this meeting)
Rick Loudenburg; Barbizon Companies; P; G
Ed Hyatt; Boston Illumination Group, Inc.; P; P
Gregg Esakoff; Electronic Theatre Controls, Inc.; P; P (change of voting status at this meeting)
Mitch Hefter; Entertainment Technology (Genlyte Thomas Group LLC); O; G
Jim McHugh; Humboldt State University; P; U
Ken Vannice; Colortran (Leviton Manufacturing Co., Inc.); P; P
Bill Klages; New Klages Inc.; P; U
Tim Cox; PLASA; P; G
Michael Lay; Strand Lighting (Strand Lighting Ltd.); P; P
Jerry Gorrell; Theatre Safety Programs; P; U
Larry Lieberman; Vision Quest Lighting; O; G (changed to principal at end of meeting)

Visitor: Matthew Immel; Humboldt State University

1 Opening Remarks

Tom Tyler called the meeting to order at 09:05.

2 Attendance and membership

A chartreuse attendance sheet was distributed.

2.1 Introductions of those present

Tyler asked those present to introduce themselves, which they did, proceeding in a counter-clockwise direction around the table.

2.2 Determination of quorum

Tyler announced that we have a quorum so business can be conducted.

2.3 Recognition of alternate voting members

There were none to recognize.

2.4 Requirements for membership

Tyler reminded the group that membership is open to all who are affected by the work of the group, but that voting members need to attend meetings. If a voting member and his alternate both miss three meetings in a row, they will be moved to observer status. This will be done at the end of the third meeting missed.

2.5 Processing of new membership requests

Tom Tyler read the applications. John Ryan applied to be the principal representative for Altman Stage Lighting for membership. Ken Vannice moved that his application be accepted. The motion was seconded. The motion was approved by a unanimous show of hands.

Rick Loudenberg moved that Gregg Esakoff become a principal voting member for ETC again. The motion was seconded. The motion was approved by a unanimous show of hands.

Name	Company	Representing	Voting status	Interest category
John T. Ryan	Altman Stage Lighting	Altman Stage Lighting	P	P
Rick Loudenburg	Barbizon Rockies	Barbizon Companies	P	G
Ed Hyatt	Boston Illumination Group, Inc.	Boston Illumination Group	P	P
Gregg Esakoff	ETC West	Electronic Theatre Controls, Inc.	P	P
Jim McHugh	Humboldt State University/IES	Humboldt State University	P	U
Ken Vannice	Colortran	Leviton Manufacturing Co., Inc.	P	P
Thomas Tyler	Lighting & Electronics, Inc.	Lighting & Electronics, Inc.	P	P
Bill Klages	New Klages Inc.	New Klages Inc.	P	U
Tony Douglas-Beveridge	PLASA	PLASA	A	G
Tim Cox	PLASA	PLASA	P	G
Ron Rykowski	Radiant Imaging, Inc.	Radiant Imaging, Inc.	A	G
David Jenkins	Radiant Imaging, Inc.	Radiant Imaging, Inc.	P	G
Michael Lay	Strand Lighting	Strand Lighting Ltd.	P	P
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	P	U
		TOTALS	12	6 P
				3 G
				3 U

3 Approval of the minutes from the previous meeting

Mike Lay moved that the draft minutes of the July 2002 meeting be approved as written. The motion was seconded. The motion was approved by a unanimous show of hands.

4 Call for patents and anti-trust statement

The following call for patents was read aloud to the group by Tom Tyler:

"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 protected intellectual property issues were identified.

The following anti-trust statement was then read aloud by Tom Tyler:

"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."

Karl Ruling displayed some of the pamphlets. No restraint of trade issues were brought to the attention of the assembly.

5 Approval of agenda

Tim Cox moved that the agenda be approved. The motion was seconded. The motion was approved by a unanimous show of hands.

6 Old Business

6.1 IESNA's LM73

Bill Klages moved that Karl Ruling's additional comments about LM-41 shall be endorsed as the sense of the committee. The motion was seconded. The motion was approved unanimously with a voice vote.

The additional comments submitted by Karl Ruling in regard to LM-41 in a letter dated Wednesday, 25 September 2002 are reproduced below:

Ms. Rita Harrold
Director, Educational and Technical Development
Illuminating Engineering Society of North America
120 Wall Street, 17th Floor
New York, NY 10005-4001

Re: Comments on LM-41 in regard to BSR/IESNA LM-73 and ANSI E1.9-2001

Dear Rita,

I've looked at LM-41-98, referenced by BSR/IESNA LM-73, and I don't think it works very well for supporting ANSI E1.9-2001. I have two comments to this effect below.

1. LM-41-98 lays out an expensive procedure for generating the kind of data needed for ANSI E1.9. It assumes (see Section 6.4.3 of LM-41-98) that measurements at set angular displacements will be adequate, and suggests 5-degree increments as satisfactory for most cases, or 2.5-degree increments in special cases. This approach makes generating the kind of data needed for ANSI E1.9 difficult and time-consuming. For example, the 2.5-degree offset suggested in LM-41 may yield data that tells us that the illumination level on a plane will be 95% of the maximum at 15 degrees from the nadir and 87% of the maximum at 17.5 degrees from the nadir, but what we need for ANSI E1.9 is to know where the 90% level is. The only way to deal with this per LM-41-98 is to do repeated scans, each time with finer resolution, until data that calculates out to the required illumination levels is obtained, or to do one massive scan at the highest resolution of the goniophotometer. This is slow and expensive!

Of course, digital photographic photometry avoids this problem. However, I wonder if it is not possible to calculate illumination levels for a virtual plane in real-time with a goniophotometer, so that the angles at which the luminous intensity will produce the required illumination levels can be noted. Nevertheless, even if this is possible, it is not the method prescribed in LM-41.

2. B4.2 contains an error. There is the note on page 16 that says:

"If the track cannot be as long as required, measurements made at near horizontal angles can be made by lowering the photodetector to the proper angle. At these shallow angles, a flat luminaire will be so foreshortened as to present a nearly point source profile to the detector. Be careful to use the actual distance when calculating equivalent intensity."

Unfortunately, this statement is not true. A fluorescent luminaire that might look like a luminous, rectangular plane when viewed from straight on, will look like a line source -- not a point source -- when viewed at a shallow angle. The inverse square law doesn't work as a predictor of illumination levels with line sources. It was while trying to measure the output of a theatrical striplight 30 years ago that I first discovered for myself that the inverse square law doesn't work for non-point sources.

6.2 Photometric data sheet examples

Rick Loudenburg moved that working group members shall review the materials provided by Jim McHugh, and provide comments via an email reflector by the Winter Solstice. Jim McHugh shall have revised versions sent to Karl Ruling no less than three weeks before meeting scheduled at the USITT conference. The motion was seconded. The motion was approved with a unanimous show of hands.

7 New business

There was a motion to bring Larry Lieberman back in as a principal voting member. The motion was seconded. The motion was approved by a unanimous show of hands.

There was a discussion of what the working group can do, moving forward. The sense of the group is that we have a responsibility to promote the standard, and should continue to meet and work to do this. There was a discussion of the desirability of sending letters to USA etc. to let end-users know about the standard's existence. Karl Ruling shall dig out the press release that was sent announcing the standards adoption and send it to the working group.

8 Other business

There was a discussion of the desirability of developing our own measuring standard, one based on the light-producing portions of the LM73 document. Jerry Gorrell volunteered to start a document. Jim McHugh moved that he shall do this as a study project. Seconded. By show of hands. Unanimous.

9 Voting status changes due to lack of attendance

Voting members who have missed the February, July, and now the October meetings:

David Jenkins and Ron Rykowski, Radiant Imaging, Inc.

These are now observers, since they have missed three meetings.

10 Schedule for future meetings

The next meeting is scheduled for 22 March 2003, from 13:00 to 17:00 at the Hilton Minneapolis. This is one of the hotels for the USITT Conference and Stage Expo.

11 Adjournment

Ken Vannice moved that we adjourn. The motion was seconded. The motion was approved on a voice vote. Tom Tyler declared the meeting adjourned at 11:14.

Working Group Membership and Contact Information as of 2003-02-13

Name	Company	Representing	Vot. stat.	Int. cat.
John T. Ryan	Altman Stage Lighting	Altman Stage Lighting	P	MP
John Luk	Altman Stage Lighting	Altman Stage Lighting	O	MP
Rick Loudenburg	Barbizon Rockies	Barbizon Companies	P	DR
Lee J. Bloch	Bloch Design Group Inc.	Bloch Design Group Inc.	O	U
Ed Hyatt	Boston Illumination Group, Inc.	Boston Illumination Group	P	CP
Bill Ellis	Candela Controls, Inc.	Candela Controls, Inc.	O	U
Francesco Romagnoli	Clay Paky S.P.A.	Clay Paky S.P.A.	O	MP
Angelo Cavenati	Clay Paky S.P.A.	Clay Paky S.P.A.	O	MP
David Bertenshaw	David Bertenshaw	David Bertenshaw	O	G
A C Hickox	Domingo Gonzalez Associates	Domingo Gonzalez Associates	O	U
Gregg Esakoff	ETC West	Electronic Theatre Controls, Inc.	P	MP
Mitch Hefter	Entertainment Technology	Genlyte Thomas Group LLC	O	G
Mike Wood	High End Systems Inc.	High End Systems Inc.	O	MP
Jim McHugh	Humboldt State University/IES	Humboldt State University	P	U
Edwin S. Kramer	I.A.T.S.E., Local 1	I.A.T.S.E. Local 1	O	U
Jim Grosh	Jim Grosh Associates	Jim Grosh Associates	O	G
Ken Vannice	Colortran	Leviton Manufacturing Co., Inc.	P	MP
Thomas Tyler	Lighting & Electronics, Inc.	Lighting & Electronics, Inc.	P	MP
Hiroshi Kita	Marumo Electric Co., Ltd.	Marumo Electric Co., Ltd.	O	MP
Tom Pincu	Moodie, Pincu & Associates, Inc.	Moodie, Pincu & Associates, Inc.	O	MP
Bill Klages	New Klages Inc.	New Klages Inc.	P	U
Tim Hansen	Oasis Stage Werks	Oasis Stage Werks	O	U
Tony Douglas-Beveridge	PLASA	PLASA	P	G
David Jenkins	Radiant Imaging, Inc.	Radiant Imaging, Inc.	O	G
Ron Rykowski	Radiant Imaging, Inc.	Radiant Imaging, Inc.	O	G
Robert Mumm	Robert Mumm	Robert Mumm	O	G
Robert Barbagallo	Solotech Inc.	Solotech Inc.	O	U
Joseph M. Good, III	Spectrum Professional Services	Spectrum Professional Services	O	G
Michael Lay	Strand Lighting	Strand Lighting Ltd.	P	MP
Jerry Gorrell	Theatre Safety Programs	Theatre Safety Programs	P	U
Larry Lieberman	Vision Quest Lighting	Vision Quest Lighting	P	CP
Eckart Steffens	SOUNDLIGHT	VPLT	O	G

The interest categories shown are the new ones required by the P&P ANSI approved on 4 December 2002.

Key to codes:

- P principal voting member
- A alternate voting member
- I individual voting member
- O observer, non-voting

- MP mass-market producer interest category
- CP custom-market producer interest category
- DR dealer or rental company interest category
- U user interest category
- G general-interest interest category