

MINUTES
CIE Division 3 Meeting

14:00 – 17:00 Thursday, July 14, 2011

Eland Room, Sun City Convention Centre, Sun City, South Africa

Abbreviations:

DD – Division Director

AD – Associate Division Director (/E – Electric Lighting; /D – Daylighting)

DS – Division Secretary

DE – Division Editor

NC – National Committee Representative for CIE Division 3

TC – Technical Committee

TCC – Technical Committee Chairman

TCM – Technical Committee Member (/C – corresponding)

ToR – Terms of Reference

List of Attachments:

Attachment 1: Action Item List

Attachment 2: Reports Received

2.1. DD3 Quadrennial report 2007-2011

2.2. CIE/USA activity report (T. K. McGowan)

2.3. Draft agenda for workshop on lighting for the elderly and visually impaired (Y. Akashi)

2.4. Report of TCC 3-47 (J. Mardaljevic)

2.5. International Dark-Sky Association liaison officer's report (T. K. McGowan)

2.6. Illuminating Engineering Society of North American liaison officer's report (J. Selander)

1. Opening of meeting

The Division Director, Prof. Jan Ejhed welcomed everyone to the meeting.

2. Approval of agenda

The agenda was approved by consensus.

3. Attendance

The DS circulated a sign-up sheet; and asked whether anyone held a proxy for an NC members who was not present. The following is the list of people who signed the sheet, with their roles within the division.

Name	Country	Role
Jan Ejhed	SE	DD3*
Yoshiki Nakamura	JP	AD/E*
Jennifer Veitch	CA	NC, DS3*

Peter Thorns	GB	DE3*
Peter Dehoff	AT	NC*
Cláudia Amorim	BR	NC*
Christoph Schierz	DE	NC*
Werner Osterhaus	DK	NC*
Anna Pellegrino	IT	NC*
Yasuko Koga	JP	NC*
Martine Knoop	NL	NC*
Wang Lei	PRC	NC*
Robert Henderson	SA	NC*
Tommy Govén	SE	NC*
Stanislav Darula	SK	NC*
Leyla Dokuzer Öztürk	TU	NC*
Dominique Dumortier	FR	NC* + proxy SL*
Wouter Rychaert	BE	NC proxy*
Erlend Lillelien	NO	NC proxy*
Orlando Marques	BR	Observer
Dennis Flores de Souza	BR	Observer
Paulo Sergio Scarazzatto	BR	Observer
Juliana Iwashita Kawasaki	BR	Observer
Asta Logadóttir	DK	Observer
Tapio Kallasjoki	FI	Observer
Celine Villa	FR	Observer
Hiroki Noguchi	JP	Observer
Yuki Akizuki	JP	Observer
Tomoko Kotani	JP	Observer
Susumu Sigano	JP	Observer
Hirokuni Higashi	JP	Observer
Youko Inoue	JP	Observer
Etsuko Mochizuki	JP	Observer
Nozomu Yoshizawa	JP	Observer
Marc Fontoynt	JP	Observer
Barbara Matusiak	NO	Observer
Wenli Wang	PRC	Observer
Nien-Tzu Chao	ROC	Observer
Yi-Chun Chen	ROC (Chinese Taipei)	Observer
Willa Breed	SA	Observer
Grantham Daniels	SA	Observer
Thorbjörn Laike	SE	Observer
Federico Favero	SE	Observer
Jose Sampaio	SE	Observer
Jarmila Darulova	SK	Observer
John Mardaljevic	GB	Observer
Kevin Houser	US	Observer
John Selander	US	IES Liaison

* With voting rights.

4. Apologies for Absence.

The following individuals had previously sent their regrets at being unable to attend the Division 3 meeting. The DS read the list: Julian Aizenberg (RU); Yukio Akashi (JP); L. Bedocs (GB); Geoff Cook (GB); A. Deneyer (BE); Michael Donn (NZ); R. Kittler (SK); Terry McGowan (US); K. Pero (CA); P. Pracki; (PL); D. Schornick (DE); Simon Simos (CH); Jan Petter Skar (NO); Yoshiaki Uetani (JP).

5. Approval of minutes of the 2010 Division 3 meeting,

Approved by consensus.

6. Division membership changes - welcome new members

The Division welcomed its new National Committee representatives since the Beijing Session in 2007: C. Amorim (BR); W. Lei (PRC); L. Filetoth (HU); M. Smid (CZ); M. Donn (NZ); J. de Andres Díaz (ES); R. S. Chang (ROC).

Dr. Dumortier pointed out that there is a new Slovenian rep, Matev Kobav (but that he held the Slovenian proxy for this meeting, as Grega Bizjak (the Slovenian alternate) was attending the Division 2 meeting).

7. Division Director and Associate Directors' Reports

DD report:

His quadrennial report, sent in March 2011 to the CIE Central Bureau, is shown in the Annex.

DD3 said this had been an interesting 4 years, with a new approach to work, recognizing that the lighting world around us has changed. He thinks this puts us in a better position to cope with new needs of the future, with non-functional TCs closed and new ones formed on important topics. More efficiency is important, although we also need to remain vigilant to be giving good quality.

Meetings have been variable in size depending on where and on the topic of the conference it's been attached to. He finds this understandable.

His role today is to talk about accomplishments rather than prospects; however it is clear that we need to be attentive to energy efficiency as well as lighting quality. Divisions need to work together – lighting questions are complex and are interconnected. He is convinced we need to work faster, to be responsive to situations; we need to be correct but to accept that our reports will be revised and changed as time goes on. It is better to have something now rather than nothing ever.

In particular we need to know more about how to control lighting; previously we could only change illuminance but now we can change almost everything, from correlated colour temperature to directionality. Either we work in the front lines describing what could be and what could respond to human needs, or we let the techniques draw us into evaluations of systems that already exist.

AD/Electric: Dr. Yoshiki Nakamura gave a short report: International concern on artificial lighting is primarily focused on two subjects; energy efficient lighting and new light sources, but both correlate to each other.

LED and OLED attract a great deal of international attention. Fast development of LED has brought about the situation that the light from LED has sufficient quality for using in general lighting. It may be soon when LEDs are the principal light sources in interior lighting. This requires the report of TC 3-50 to be issued soon, and that we examine whether the lighting criteria of today are applicable for LED light sources. One topic may be glare sensation from small light sources like LEDs.

IEA Annex 4E-SSL 2010-2013 “Solid-State Lighting” is developing a document titled “Rating of LED Lighting systems for lowest possible energy consumption and highest possible visual quality for users”. We should pay attention to those activities.

Organic LEDs have just started, so their measurement procedure would be of great importance now at the first stage but will soon move to next stage, application. We should prepare for it.

As to energy efficiency lighting, integration of artificial lighting and daylighting is required. To integrate them we should establish lighting design procedure applicable to different adaptation level.

LED is drawing everything; our activity should be greatly in relation to LEDs: energy efficiency; health (maybe related to colour); mesopic. Mesopic is a little off the track for interior lighting, but could be an influence. We need to watch the LED trends which are likely to shift from measurement to application topics. The new Board should take this into account.

AD/Daylight: This position is empty, so there was no report.

8. Division Secretary’s Report

DS 3 reported: She has tried to use e-mail more frequently over this quadrennium to send information that is not CIE as well as necessary CIE business. Please inform her whether this has been useful or not, and whether the frequency has been acceptable. As DS3, she undertook over the last year all but one of the tasks assigned to her, but as it happened a TC on lighting energy use was formed without her drafting a terms of reference. She also had the sad duty to write letters of condolence to the family of Prof. E. Ne’eman, long-time national member for Israel, who died in the past year. No replacement has yet been appointed.

9. Technical Committee Updates:

TC 3-25 Co-ordination of the IDMP and its data (N. Igawa)

During the past year, Prof. Igawa was confirmed by the BA as the new TCC for this committee. However, no report was received from him in advance of the meeting, and he was not present.

There was a general discussion of the status of this TC. This committee is unusual in that it collects an ongoing database. In Prof. Igawa’s absence, Dr. Dumortier said that he thinks there are ~25 IDMP stations, including some new ones. Dr. Darula has had contact with Prof. Igawa, but the last time was about 6 months ago. Prof. Igawa

was then trying to update his list of active stations. Dr. Darula knows there is a new IDMP station in Calabria, Italy.

Dr. Dumortier reported that the original ENTPE web pages are still up and running, but the pages look old and tired, as they were designed in 1999. He suggested that the pages need revision and to reduce the amount of information on the web so that it is not so hard for the coordinator to keep the information updated. He suggested that new stations should make their data available on the web, or make some mechanism to obtain it. (e.g., put it on an ftp site, but ask people to send an e-mail to get the password).

Dr. Darula commented that yes the site needs to be updated, but at least his own e-mail address is correct and he is happy to send his Bratislava data to people who ask for it.

Prof. Koga reported that Prof. Igawa has had trouble to update the network.

A questioner from the floor asked for the URL of the existing site, and queried whether it should be linked from the CIE D3 page description of this TC. Dr. Dumortier said that the URL is <http://idmp.entpe.fr>, but that he opposed the idea of a link from the CIE D3 site because this page is too outdated.

Prof. W. Osterhaus asked how many people want to or do access the data. Dr. Darula says he gets lots of requests for it, but didn't have a count. Prof. Osterhaus said that the count information would be useful, for example if there is a frequently used site that the operator wants to close that info can be used to work to find someone nearby to operate one instead.

DD3 commented that people can't make use of it if they can't get it.

Dr. Dumortier commented that most stations do full solar radiation, so the data are useful for other applications – in fact, more useful for solar radiation applications than for daylighting. Continuation is also important because it validates satellite data that are used to estimate daylight availability.

Action 1: New AD/D to follow up with Prof. Igawa.

TC 3-34 Protocols for describing lighting (J. Veitch)

TCC reported: The final draft is complete except for formatting. It will go to the DE3 for review by the end of July; following his review and any revisions it will go to the committee for ballot.

TC 3-39 Discomfort glare from daylight in buildings (W. Osterhaus)

TCC reported that there was a meeting in Sun City with lots of attendance including lots of visitors. Toshie Iwata has been working with him in Denmark to wrap it up. They will complete the document over the next couple of months with the comments from the Sun City meeting. With a complete document they will have it reviewed by the DS, prior to voting. Aiming for completion at the end of this year (2011).

DD3 commented he thought the meeting was very effective.

In addition, there was a workshop on discomfort glare earlier on July 14. There will be a report on this workshop in the Volume 2 of the Session Proceedings. Further discussions on future work are expected to develop from this activity.

TC 3-42 Indoor work space application guide (K. Pero)

TCC reported verbally to DS3: She continues to seek qualified individuals to work on the guide. Work activities have prevented her from making much progress, but the topic is growing in importance for her organization so she foresees taking it up more actively in the coming year.

DS3 offered to put interested parties in contact with Ms Pero.

DD3 asked for a timetable to show how it will be completed.

Action 2: Incoming AD/E to request timetable for accomplishing the work.

TC 3-43 Determination of discomfort glare (L. Bedocs)

TCC reported: There was no meeting of TC 3-43 since the last plenary as the main task of the TC has been completed with positive vote by the summer of 2008. The finalisation experienced some operational difficulties but the Technical Report was completed during the first half of 2010 by the TC Chairman and CIE Technical Manager. The Technical Report CIE190: 2010 with title “Calculation and presentation of unified glare rating (UGR) tables for indoor lighting luminaires” was published in July 2010. Since then the TC Chairman provided help to users, software houses and cleared up some queries. The report is already in use by a number of member countries and companies.

In the last Division 3 meeting the TC3-43 made the offer to revise CIE 117:1995. The revision is mainly needed to remove the conflict with CIE190 but due to CIE administrative rules the offer was not accepted at HQ. CIE HQ required that a new TC needs to be formed to carry out this task.

As there are no more tasks for CIE TC3-43 it is recommended that TC3-43 be closed down during the Division 3 meeting.

I would like to take this opportunity to thank the TC members for their work, help and cooperation and all the people who have contributed to the production and successful publishing of the Technical Report **CIE190:2010**.

Closure moved; Osterhaus /Thorns. Unanimous. [Confirmed by BA at its meeting on 2011-Jul-16, this TC is now closed.]

TC 3-44 Lighting for older people and people with visual impairment in buildings (Y. Akashi)

TCC reported by e-mail: For further discussions on lighting for the elderly and people with visual impairments, I, with the assistance of Dr. Shigeko Kitamura, have drafted the outline of the TC report. In this outline, I reviewed literatures on the effects of lighting on visual performance, glare, and sleep efficiency, and listed subjects that the TC report should address.

At the request of the Division 4 director, Dr. Ad de Visser, I prepared the interdivisional workshop, “Lighting for the elderly and visually impaired, ” which took place on July 12th, 2011. This workshop discussed the possibility of establishing a new interdivisional TC on this topic. (See the Annex for the draft agenda of the workshop.)

Mr. Lillelien mentioned that Norway had endeavoured to involve a Norwegian expert in this TC. As far as he is aware, this person was not contacted.

Action 3: Incoming AD/E will contact TCC to ask about this, as part of updating TC membership records.

TC 3-45 Luminance based design approach (Y. Nakamura)

TCC reported: The chair distributed the second draft of the report. A meeting to discuss the draft was held 12th July. The report is almost finalized. Only editorial corrections are needed. He thinks the final draft will be ready in about a month, although there are some issues needing TC vote before the Divisional ballot.

TC 3-46 Research Roadmap for Healthful Interior Lighting Applications (J. Veitch)

TCC reported: There was a successful joint D3/D6 workshop on July 12 at the CIE Session on this topic and a committee meeting on July 13. The report framework has been agreed upon, but not all contributors have completed their sections. The TC requests an extension to 2013 to complete the TC report.

Moved: Osterhaus/Lillelien, to extend this TC's deadline to 2013. Unanimous. [No BA confirmation is needed for this Divisional decision; the report is due at the mid-Session meeting in 2013.]

TC 3-47 Climate-Based Daylight Modelling (J. Mardaljevic)

The TCC provided a written report (see Annex). He requested an extension of the term of the committee until current results have been consolidated, making the end of the TC in 2014 instead of 2012.

In person, he remarked that not a lot happened in daylight modelling for 30-40 years and now a lot of activity has taken place in a short time. Testing of a new Radiance component is only beginning, and new package is coming from VELUX. These activities (which are outside the scope of the TC) need to be completed before his TC can complete its work.

Moved: Veitch/Pellegrino. That the deadline for this TC should be extended to 2014. Unanimous. . [No BA confirmation is needed for this Divisional decision; the report is due at the Division 3 meeting in 2014.]

TC 3-48 CIE standard method of UF table calculation for indoor luminaires (P. Thorns)

TCC reported: There has been no meeting of TC3-48 since the last CIE meeting in Vienna, March 2010. The next meeting was scheduled during the CIE Quadrennial in Sun City, but as only 2 TC members attended no decisions were taken. TCC will chase the members by e-mail with the aim to complete the document by the end of calendar year 2011.

A 30 page document has been produced detailing the calculation methodology to produce UF values. The current contents are:

- Calculating the geometric factors (F_G)
- Calculating the distribution factors (F_D)
- Calculating the transfer factors (F_T)
- Calculating the utilisation factor (F_{UF})
- A simplified form factor and utilisation factor calculation
 - Form factors for the three-surface condition
 - Utilisation factors for the three-surface condition
 - Form factors for the four-surface condition
 - Calculating the form factors for the upper part of the room comprising ceiling, frieze and luminaire plane
 - Calculating the form factors for the lower part of the room comprising luminaire plane, walls and floor
 - Calculating the additional form factors for the complete four-surface room
 - Utilisation factors for the four-surface condition
- Annex 1 – Standard conditions for calculating the geometric factor tables (F_G)
- Annex 2 – Tables of geometric factors (F_G)
 - Tables of values of F_{GL}
 - Tables of values of F_{GU}
- Annex 3 – The transfer factor tables (F_{TF})
 - Tables of values of F_{TF} for ceiling mounted luminaires
 - Transfer factors to the working plane
 - Transfer factors to the walls
 - Transfer factors to the ceiling
 - A3.2 Tables of values of F_{TF} for suspended luminaires
 - Transfer factors to the working plane
 - Transfer factors to the walls
 - Transfer factors to the frieze
 - Transfer factors to the ceiling

There is a major outstanding issue regarding the calculation methodology. When calculating the geometric factor values an array of luminaires must be defined within the room (of index K) for a given value of SHR. Obviously it is not possible to exactly fit the luminaire spacing according to both SHR and K so the number of luminaires has to be adjusted to fit the room. Given a value for the number of luminaires required which includes fractions of luminaire this can be in one of two ways

- The number of luminaires is always rounded down to the nearest whole number.
- The number of luminaires is rounded down if the fraction part is <0.5 , otherwise it is rounded up.

Both of these methods have positive and negative points and a document has been produced showing the possible variations in actual SHR achieved using these two methodologies. Therefore a decision is required as to which method is considered suitable (currently the uses option 2).

The other main outstanding point for the document is the addition of a worked example but this is not possible until we have resolved the issue on geometric factors.

TC 3-49 Decision Scheme for Lighting Controls for Tertiary Lighting in Buildings (P. Dehoff)

TCC reported: TC 3-49 was founded 2009 during the Budapest meeting of CIE. It has about 20 members. We have had three meetings to discuss progress and assign tasks:

- Face2face: Sept 2009 during Lux Europa, Istanbul: targets agreed (see report 2010)
- Face2face: March 2010 during CIE Lighting quality and energy efficiency symposium, Vienna
- Webmeeting: Oct 2010

Progress to date:

- An extensive literature search was made covering all types of lighting control strategies that can be applied to increase energy efficiency and user comfort.
- Per control strategy a small subgroup was formed, responsible for writing an overall summary of the topic.
- A draft of the content is available but not in a format that it can be distributed easily

The TC met in Sun City, and the room was almost full. In the meeting we:

- Reviewed the results from the sub groups
- Continued the workflow for the draft report
- Scheduled the next meetings

The target remains:

- Offer guidelines in order to balance lighting quality, user comfort and energy efficiency in lighting controls solutions for tertiary lighting in buildings (i.e. for commercial, institutional and industrial buildings).
- Work on a decision scheme with focus on the user requirements (visual comfort, performance, personal control) to determine the most applicable control solution, including the consequences for possible savings. In this, it needs to be assumed that there are no technological or financial hurdles.
- The TC plans to produce the first draft of the report by the end of 2012. Everyone is very motivated.

DD3 commented on the importance of the topic being timely and the report being needed sooner rather than later. TCC commented that this is about decision schemes it will not be technology-dependent, so it will outlast any specific controls technology.

Prof. Osterhaus asked, "What is tertiary lighting? Could the title be modified to say "non-residential buildings" because "tertiary" is hard to understand?" TCC replied that the phrase is common in Europe to mean commercial lighting. DS3 recommended that the committee consider not using the phrase in the title of the report, which need not be the same as the title of the committee. (Later, Mr. Thorns looked up "tertiary" on Wikipedia and found that it refers in this context to the service sector of the economy, as opposed to agriculture (primary) and manufacturing (secondary).)

TC 3-50 Lighting quality measures for interior lighting with LED lighting systems (M. Knoop)

TCC reported: A few members of the TC had a small informal meeting during the CIE conference in March 2010. The official start of the TC was in June 2010. There are 12

members and 5 corresponding members, representatives from the US, Canada, Europe and Japan.

Progress to date:

- CIE publications and standards are reviewed to list lighting quality measures that can be applied to commercial interior LED lighting systems.
- A first evaluation of suitability of, as well as gaps and weaknesses in, existing quality measures is made.
- A structure for the Technical Report is drawn up.

The TC met in Sun City (9 members, 34 observers were present). In the meeting we discussed, adjusted, and obtained consensus on the structure of the Technical Report. The next steps are to assign sections to TC members and to establish a time frame for completion. She recognizes the importance of producing a report rapidly on this quickly-evolving technology.

TC 3-51 CIE Standard General Sky Guide (S. Darula)

The first task of the new TC3-51 was the revision and update of contact information about actual and potential TC members, which was finished in autumn 2010. Active communication with Dominique Dumortier and Ian Ashdown regarding the latest version of guide texts from the old TC 3-37 followed. These were sent to the TCC and work on their revision, modification and editing started. Several paragraphs had to be rewritten while a few have been added in respect to new knowledge. TC members Aris Bartzokas, Harry Kambezidis, Ladislav Komar, Marina Markou, Valerio Lo Verso and Stephen Wittkopf were asked to elaborate new paragraphs with a deadline of July 6, 2011. The first draft of the guide, formatted according to CIE rules, was sent to the DE3. His corrections and comments were incorporated into the edited version of the draft that was then sent to TC members for commenting. Follow-up work will include completion of all paragraphs, editing the new ones and consideration of TC member comments. Then work on the final text will proceed in accordance with CIE procedures.

TCC added in person: Eight members sent comments. A detailed discussion took place at the meeting in Sun City, and the guide will be revised again taking these into account. Dr. Wittkopf's contribution will come in August. One empty section needs further discussion. With those two parts the draft will be complete, and this will be wrapped up soon so the 2nd draft can be checked by the TC members, then voted upon. When this is complete he will follow CIE rules to wrap up the work, and he has contacted P. Zwick at the CB to learn how to do this.

TC 3-52 Energy performance of buildings – Energy requirements for lighting (D. Schornick)

This new TC was formed by e-mail ballot in April 2011. TCC reports that he is currently collecting membership application and copyright agreement forms (around 15 received from 25 interested persons). The first meeting is planned to take place on 10 Nov. 2011 at the CIE office in Vienna.

Mr. Selander asked for more information. Dr. Knoop read the ToR. Mr. Dehoff commented that there is interest in energy standards for lighting globally, complementing building energy standards generally. There is a need to address energy efficiency in lighting on the level of ISO, as has been done in CEN. Dr. Veitch

commented that membership needs to be more than European.

Action 4: incoming AD/E will report to Mr. Selander as to whether or not there is a US member).

Dr. Darula commented on importance of making links to daylight requirements so that they are complementary and included. Dr. Amorim commented that she had asked to be a member, but had heard nothing. DS3 asked to confirm her e-mail address, as others have said that she has been difficult to contact.

Action 5: incoming AD-E to make contact between TCC and Dr. Amorim.

10. Reportership Updates

R 3-13 International Lighting Vocabulary (Y. Koga)

The draft standard of the International Lighting Vocabulary (CIE DS 017.3/E: 2011) was sent to the National Committees for the final voting on 18 March 2011. The voting ended on 18 June 2011. 21 National Committees voted and the draft standard "ILV - International Lighting Vocabulary" was approved (20 voted Yes, 1 voted No). As we have heard elsewhere there is one outstanding issue, which D2 will decide this week.

Moved Darula/Veitch, to closed R3-13 with the thanks of Division 3 for Prof. Koga's hard work. Unanimous. [This reportership is now closed.]

R 3-28 Lighting requirements for night-shift workers (M. Knoop)

The report has now been circulated more than once among the division members. It has been decided not to make the report public. The conclusions will be built into the report of TC 3-46.

Moved Veitch/Thorns, to closed R 3-28. Unanimous. [This reportership is now closed.]

(A coffee break occurred at this point.)

11. Liaison Officers' Reports

As the meeting resumed after the break Mr. Dehoff asked about how the new arrangements with CEN and ISO work. Shouldn't we get more formal information through the CB now? Mr. Thorns commented that his understanding that they are working on developing a method. DD3 said that his understanding is that there is no new method yet.

Action 6: incoming DD3 will follow up with CB.

CEN TC169 Light and Lighting – L. Bedocs (received in advance)

The TC held the plenary meeting in Oslo 20/21 June 2011. The meeting with Mrs Paul of CIE in attendance re-enforced the need for closer cooperation between CIE and CEN for the benefit of all nations. It was agreed to have liaison between CIE Divisions and CEN WG.

The production of standards is by the 13 Working Groups (WG) as reported below.

WG1 – Terms and Definitions – The EN12665 revision was completed and the new version published as EN12665: 2011. Link with ILV has been made.

WG2 – Lighting of work places – The revised EN 12464-1 for lighting indoor workplaces was completed and published as EN 12464-1: 2011. It will be offered to CIE/ISO.

WG3 – Emergency lighting – The revision of EN 1838 has been completed and draft is out for vote with closing date September 2011.

WG4 – Sports lighting – Conflict with FIFA guide book recommendations have not been resolved but will be considered during the revision of the guide for 3D TV lighting.

WG5 – Road lighting – This WG is dormant. The revision of EN 13201 is by WG12.

WG6 – Tunnel lighting – The draft standard prEN 16276 on “Evacuation lighting in road tunnels” is published for enquiry.

WG7 – Photometry – The new part to EN 13032 on Photometry tests with T5/CLF lamps was approved under UAP and is awaiting publication. The work on light meters is on hold waiting for CIE TC 2-40 results. The WG will draft a standard for industrial quality meters. Urgent work started for a standard on the photometry of LED modules and luminaires.

WG8 – Exposure to incoherent radiations – The draft standard on the “Classification of non-electrical sources of incoherent optical radiation” prEN 16237 is published for enquiry.

WG9 – Energy requirements for lighting in buildings – The F1 table corrigendum to EN 15193 was published. Revision of EN 15193 to take in the requirements of Mandate 480 is at planning stage and will link up with other standards on environmental services.

WG10 – Characterisation of optical materials – The draft standard on “Performance of reflecting surfaces for luminaires” prEN 16268 is published for enquiry.

WG11 – Daylighting – The overall structure of the proposed standard on Daylighting is established and drafting of the sections has commenced.

WG12 – Joint Working Group with CEN/TC169/226 – Road lighting – revision of the four parts of EN 13201 is progressing making use of CIE 115 and 140 reports. Part 5 on energy efficiency is nearing completion with draft expected for enquiry by the end of 2011.

WG13 – Non-visual effects of light on human beings – This new WG will draft a standard on the metrics and measurements procedures to evaluate and compare lighting conditions with respect to their potential in achieving non visual, eye mediated effects of light on human beings. The standard will give requirements for lighting application in the tertiary sector.

Note: TCC 3-46 is an observer on WG13.

ISO/TC159/SC4 Ergonomics of Human-System Interactions – L. Bedocs

The subcommittee is busy with the updating of parts of standard ISO 9241 covering the ergonomic requirements of interactive systems. Published several revised parts during the last year. Revision of part 307 is problematic as some countries wish to remove the gloss limits on frames whilst in the EU the Display screen directive demands limiting of all disturbing reflections and luminances. Glare is an issue.

ISO/TC159/SC5 Ergonomics of the Physical Environment – L. Bedocs

The subcommittee is concentrating on standards covering “Accessible design requirements. Integrated environments and Environments for people with special requirements are on going. The SC published several standards on Accessible design in the series ISO 24500.

ISO TC163/SC2 – Thermal performance and energy use in the built environment / Calculation Methods (Daylight) - Y. Uetani

The NWIP ISO/WI 10916 "Calculation of the impact of daylight utilization on the energy demand for lighting" was approved by voting in May 2010, and Working Group 14 "Daylight in buildings" was set up. The leader Dr. Jan de Boer is planning to hold the next meeting of the work group in parallel to the TC 163 meeting at Chicago on September 12th from 9:00 – 13:00.

ISO TC205/WG7 — Indoor Visual Environment — Y. Koga

Liaison: ISO TC205/WG7 "Building Environment Design - Indoor Visual Environment" The scope of ISO TC205 is standardization in the design of new buildings and retrofit of existing buildings for acceptable indoor environment and practicable energy conservation and efficiency. Indoor environment includes air quality, and thermal, acoustic and visual factors.

The next plenary meeting of TC205 will be held in Chicago from 12 to 14 September 2011. In parallel with it, the plenary meeting of ISO TC163 "Thermal Performance and Energy Use in the Built Environment" will be held on 14 and 15 September in the same place. Also, a Joint Workshop of ISO TC163 and TC205, and ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) will be held on 11 September 2011.

TC205/WG7 has finalized ISO/DIS 16817 "Building environment design - Indoor environment - Design process for visual environment". ISO/FDIS 16817 was registered for formal approval in April 2011. TC205/WG7 should start to consider the next work item proposal before long. D3 can suggest items; if there are no suggestions then the WG might be closed.

Action 7: New DD3 will form a small task group to contribute through the liaison officer to this WG, copying the CB.

Illuminating Engineering Society of North America (IES) – J. Selander

Mr. Selander provided a detailed report; see Annex. His role is now Past-President of IES, until June 30, 2012; he will continue as our liaison indefinitely, meeting with the Board regularly. He highlighted the 10th edition of the *Lighting Handbook*, now published in hard copy and soon to be released in electronic form. A Model Lighting Ordinance was just published jointly with IDA (see separate IDA report), for municipalities to start limiting light trespass and light pollution problems. The new IES Public Policy Director has a mandate to ensure that North American public policy respects lighting quality issues and that IES is recognized as the source of that information. There are new seminars available for IES sections to offer; some are podcasts also. Courses often are eligible for continuing education credits for architects and engineers, etc; they also

provide useful foundation for taking certification exams like NCQLP and LEED-AP. An online Lighting Information Center is being developed to inform the public about lighting issues. The LightFair trade show was larger than ever this year (24,000 people); IES membership is at a high with nearly 10,000 members – this is totally unlike other building industry groups. They attribute this to the changing composition of the lighting industry, many new players. Even daylighting is increasing (e.g., as a part of the trade show space).

International Dark Sky Association (IDA): T. K. McGowan

Mr. McGowan provided a detailed report; see Annex. He flagged light escaping from buildings at night as an increasing issue.

Professional Lighting Designers' Association – empty at present.

DD3 commented that although there is an MoU with PLDA, there is at present no liaison officer because of staffing issues at PLDA.

International Association of Lighting Designers – empty at present.

Action 8: incoming DD3 to check with CB on status of PLDA and IALD liaisons.

Society of Light and Lighting – (G. Cook, informal)

No report received.

Illuminating Engineering Institute of Japan (IEIJ): Y Nakamura, informal.

Dr. Nakamura commented that the IEIJ situation is as elsewhere: energy and LEDs are their two preoccupations. They are working on a new document (in Japanese) on lighting energy. They had an international conference (with China and Korea) on solid-state lighting.

World Meteorological Organisation (WMO) – None.

Ann Webb is our contact person there as being Chair of one of its scientific committees. No issues related to D3 seem to be active.

International Energy Agency

Action 9: Incoming DD3 to follow up on MoU through CB – with IEA programmes 4E and SHC.

Dr. Fontoyont is the operating agent for the solid-state lighting task, which has URL: <http://ssl.iea-4e.org>. Details of their activities are available there, but are focused on establishing international performance criteria and accredited testing lab network to verify that products meet these criteria. The next meeting Stockholm in September 2011.

World Health Organization – None.

12. Review of Division 3 publications (Update on 2009 review)

CIE #	Title	Year	2010 Status / Suggestion	2011 Update
49	Guide on the emergency lighting of building interiors	1981	D3 voted to withdraw. Also some information should appear in the TC 3-42 report.	As of July 10, 2011, the report still appeared on the webshop (despite DS3 having informed CB). Action 10: incoming DD3 to report to CB and ensure that the report is withdrawn DS3 passed this request to TCC 3-42 in 2010.
97/2	Maintenance of indoor electric lighting systems	2005	Mr. Stockmar's erratum page was to be added and the report re-issued.	DS3 failed to follow up in 2010 and nothing has happened. Action 11: Incoming DD3 to follow up with CB.
108	Guide to recommended practice of daylight measurement	1994	D3 directed DS3 to work with the new TCC 3-25 to develop ToR for a new TC to revise this document.	DS3 reported that Prof. Igawa has agreed to chair a new TC but has not produced the necessary ToR for the division to vote on. Action 12: Incoming AD/D to follow up with Prof. Igawa.

13. Future work

New TCs

- Prof. Osterhaus had two ideas that are open for discussion:

- TC 3-39 took the writing of design documents out of its ToR in 2010 (and this was approved by the BA in summer 2010). They propose a new TC called "Design Guidelines for the Control of Glare in Daylit Environments". The plan is to review the original terms of TC 3-39 when the current committee has completed its work and then propose a new TC to write the guidelines. Perhaps Prof. Toshie Iwata will be TCC, although this is not certain..
- A separate TC might review the mathematical models for discomfort glare, completing the work briefing summarized during the workshop earlier on July 14.

- DS3 observed that we need a TC to review and revise 117 to bring it into alignment with the new publication 190:2010. This could have been done as an additional task by TC 3-43, but the CB was not open to this. Now Mr. Bedocs has retired, so we would also need a new TCC to chair this TC.

- Dr. Amorim asked about a new TC that would relate lighting and architecture, pulling together building design. She wondered why TC 3-20 was closed in 2008. DD3 agreed that the topic is important but we need to narrow down the question for the TC; TC 3-20's terms of reference were too broad for it to complete the task, it was a topic for a lifetime, not a committee. DD3 suggested that she come back to us with a specific proposal, which she said she would attempt.

- Dr. Fontoynt agreed that scope of the architecture idea was too broad, but suggested a more specific TC to review daylighting systems for buildings in a manner useful to architects. He said that it would be legitimate for CIE to do so. Mr. Thorns suggested that maybe it should be a reportership first, that the reportership could

proposal ToR that would be a starting point. DD3 agreed. Mr. Fontoynt suggested that he could do this, as he's thought about the issues for his new book (recently published, but in French only).

- Dr. Matusiak suggested that we could develop a guidance document on scientific methods for architects and lighting designers. This would be a review and commentary on research methods, with guidance on when to use which method. She will think on it and perhaps come back with a specific topic. (Prof. S. Fotios would be a possible member of such a TC.)

- Prof. Osterhaus asked whether there could be a “standing committee” to keep track of current issues on lighting and architecture. DD3 thought it could be interesting as a way to take all aspects into account.

Action 13: Incoming DD3 to investigate feasibility of this in the CIE structure.

New Reporters

- R 3-xx Evaluation of Daylighting Systems and Products: Marc Fontoynt
After the meeting, Dr. Fontoynt suggested two options for terms of reference for this new reportership:

1. To explore the potential for upgrading existing metrics that aim to define the performance of daylighting systems and products; or,
2. To propose indices to describe the performance of daylighting schemes, systems, and products.

Action 14: Incoming DS3 to circulate these ideas for discussion and later Division ballot.

- R3-xx Prospects for switchable glazings (electrochromics): John Mardaljevic
Mr. Mardaljevic reported on new developments in switchable glazings, which he thinks could totally change facade design. He will try to formulate some ToR and get back to us for online discussion and subsequent ballot.

14. Any other business

Prof. Schierz asked about the liaison with PLDA; he had thought we had one. DD3 commented that CIE has an MoU with PLDA but in practice it has never worked, because of problems with PLDA. The President of PLDA was the liaison but he resigned as President so now they need to solve that before they can provide the liaison officer. DD3 expects that it will take a little while but that it will get resolved. This is a matter of growing pains for the new PLDA organization. Now that he is no longer on the council of PLDA he has no inside information.

15. New Division Board

DD3 announced that, as was already known, the Division Director for the 2011-2015 quadrennium would be Dr. Jennifer Veitch (Canada). She led the remainder of the meeting.

Dr. Veitch thanked Prof. Ejhed for his service to Division 3, and those present joined in a round of applause.

She then announced the rest of the Division 3 Board for this quadrennium:
Associate Director, Electric Lighting – Prof. Yasuko Koga (Japan)
Associate Director, Daylighting – Prof. Anna Pellegrino (Italy)
Secretary – Dr. Martine Knoop (the Netherlands)
Editor – Mr. Peter Thorns (GB)
Photographs were taken.

There was also a round of applause in thanks for the work of the outgoing AD/E, Dr. Yoshiki Nakamura. He will serve CIE as Secretary on the Board of Administration.

The incoming DD3 commented that she wants to bring the division slowly into compliance with new guidelines for TCs and Code of Procedure and will be asking the ADs to take the lead in assisting TCCs to apply these rules. Another change in the coming years will be the interaction with the Global Lighting Forum, which will present topics for possible work to CIE. Some of these will concern interior lighting and we will need to consider how to respond, either with new activities or by completing work already under way.

Dr. Fontoynt commented that GLF also brings resources to the table, to facilitate our getting work done; also we can ask questions of them.

16. Next meeting

2012 Webex meeting – date and time to be decided, likely in spring 2012

2013, April 12-19 CIE Centenary & Mid-term meetings in Paris, France

17. Adjournment

J. A. Veitch
Secretary Division 3 (2007-2011)

Attachment A***CIE Division 3 2011 Meeting — Action Item List***

Action	Actor	Deadline
1. Follow up with Prof. Igawa regarding status of IDMP and TC 3-25.	Incoming AD/D	Jan 31, 2012
2. Request timetable from TCC 3-42 for accomplishing the work .	Incoming AD/E	Jan. 31, 2012
3. Contact TCC 3-44 to ask about Norwegian member, as part of updating TC membership records.	Incoming AD/E	Oct. 31, 2011
4. Report to Mr. Selander as to whether or not there is a US member of TC 3-52.	Incoming AD/E	Oct. 31, 2011
5. Make contact between TCC 3-52 and Dr. Amorim.	Incoming AD/E	Sept. 30, 2011
6. Clarify procedures for renewed cooperation with CEN and ISO following the signing of the MoUs	Incoming DD3	Oct. 31, 2011
7. Form a small task group to contribute through the liaison officer to ISO TC2-5/WG7, copying the CB.	incoming DD3	Dec. 31, 2011
8. Check with CB on status of liaison with PLDA, IALD	Incoming DD3	Oct. 31, 2011
9. Discuss with CB the possibility of formal CIE liaisons with IEA programmes on Solar Heating and Cooling (SHC) and Energy-Efficient End-user Equipment (4E).	Incoming DD3	Oct. 31, 2011
10. Report to CB and ensure that the report 49-1981 on emergency lighting is withdrawn.	Incoming DD3	Jul. 31, 2011
11. Erratum page addition to CIE 97/2:2005	Incoming DD3	Sept. 30, 2011
12. ToR and TCC for revision to CIE 108:1994	Incoming AD/D	Jan. 31, 2012
13. Investigate feasibility of “standing committee” idea and report to D3 membership	Incoming DD3	Sept. 30, 2011
14. Circulate proposed ToR for daylighting system performance reportership and manage ballot.	Incoming DS3	Oct. 31,2011

**Attachment 2
Reports received**

- 2.1. DD3 Quadrennial report 2007-2011
- 2.2. CIE/USA activity report (T. K. McGowan)
- 2.3. Draft agenda for workshop on lighting for the elderly and visually impaired (Y. Akashi)
- 2.4. Report of TCC 3-47 (J. Mardaljevic)
- 2.5. International Dark-Sky Association liaison officer's report (T. K. McGowan)
- 2.6. Illuminating Engineering Society of North American liaison officer's report (J. Selander)

**DIVISION 3: INTERIOR ENVIRONMENT AND LIGHTING DESIGN
QUADRENNIAL REPORT 2007 - 2011**

Jan Ejhed

1. TERMS OF REFERENCE

To study and evaluate visual factors which influence the satisfaction of the occupants of a building with their environment, and their interaction with thermal and acoustical aspects, and to provide guidance on relevant design criteria for both natural and man-made lighting; as well as to study design techniques, including relevant calculations, for the interior lighting of buildings; incorporating these findings and those of other CIE Divisions into lighting guides for interiors in general, for particular types of interiors and for specific problems in interior lighting practice.

2. DIVISION OFFICERS

Jan Ejhed will resign from the directorship 2011.

DD	Jan Ejhed (SWE)	Director
DS	Jennifer Veitch (CA)	Secretary
DE	Peter Thorns (GB)	Editor
ADEL	Yoshiki Nakamura (JP)	Associate Director Electric Lighting
ADNL	Dominique Dumortier (FR)	Associate Director Natural Lighting (resigned 2010)

3. DIVISION MEETINGS

- **Beijing 2007**

The D3 meeting was held in connection to the 26th CIE Session at Beijing International Convention Centre. The 10th of July 2007, with 43 attendances including 14 national representatives.

- **Ljubljana 2008**

The D3 meeting was held in connection to the 4th ‘Balkan Conference on Lighting’ at M hotel, Ljubljana Slovenia. The 7th of October 2008, with 29 attendances including 14 national representatives.

- **Budapest 2009**

The D3 meeting was held in connection to the CIE-Midterm Meeting and ‘Light and Lighting Conference with special emphasis on LEDs and Solid State Lighting’ at the Lorand Eötvös University, Budapest, Hungary. The 1st of June 2009, with 25 attendances including 10 national representatives.

- **Vienna 2010**

The D3 meeting was held in connection to the CIE Conference “Lighting Quality and Energy Efficiency”<http://vienna2010.cie.co.at/> at the Hilton hotel, Vienna, Austria. The 19th of March 2010, with 18 attendances including 12 national representatives.

4. TECHNICAL COMMITTEES

4.1 Closed TCs

TC3-20: Lighting and architecture concerning artificial and daylighting

Chair: H. Kramer (GE)
Formally closed 2008, no final report

TC3-41: The visual quality of displays in museums

Chair: E. Ne’eman (IS)
Formally closed 2008, no final report

TC3-36: Use of satellite images to derive daylight data

Chair: D. Dumortier (FR) [-2010]
This task has been linked to the IEA Task 36, “Solar resources”, for investigate and validate new methods to derive daylight information from the satellite images. This is what has been done for the SATEL-LIGHT server (www.satel-light.com). It has been documented and reported by Yasuko Koga in *the reporter ship which preceded the creation of this TC*.
Closed 2010, no report.

TC3-37: Guide for the application of the CIE general sky

Acting Chair: D. Dumortier (FR) [-2010] Closed 2010.
The material of this TC will be moved and taken in consideration in the new TC 3-51: CIE Standard General Sky Guide. Chair: Stanislav Darula (SK)

TC3-43: Determination of discomfort glare

Chair: L. Bedocs (GB) [-2010]

Final report 2010 published : *CIE 190:2010 Calculation and Presentation of Unified Glare Rating Tables for Indoor Lighting Luminaires*

4.2 TCs in progress

TC 3-25: Co-ordination of the IDMP and its data

Chair: Norio Igawa (JP)

To encourage and assist researchers in establishing new IDMP stations. To insure the coherence of the network by calibrating the sensors used in all IDMP stations. To maintain up to date information on the network. To ease the exchange of information inside and outside the network. Produce data base

TC 3-34: Protocols for Describing Lighting

Chair: Jennifer Veitch (CA) [1999 – 2011]

To establish a catalogue of application-independent descriptors of lighting. To provide relevant, specific, objective definitions of supporting concepts associated with lighting. To develop a measurement protocol for each of the descriptors, with the goal of achieving protocols for use equally by researchers, in recommendations, and in design. To prepare a strategy and action plan for widespread promulgation and application of these protocols and definitions by researchers, journal editorial boards, lighting educators, CIE Technical Committees and Standards, and in other lighting organizations.

TC 3-39: Discomfort Glare from Daylight in Buildings

Chair: Werner Osterhaus (DK) [2003 -2011]

To review existing discomfort glare assessment methods with respect to their suitability to daylight glare. To identify strengths/weaknesses and threats/opportunities in these existing methods. To make a recommendation on a provisional method for daylight glare assessment. To identify additional parameters that might influence the perception and assessment of discomfort and glare from daylight. To develop proposals for possible research directions and projects suitable to advance the understanding of these parameters. Terms of reference changed 2010.

TC 3-42: Indoor Work Space Application Guide

Chair: Karen Pero (CA) [2006 – 2011]

To determine areas of application to be included and review the CIE 29.2 text and to cross-reference the Standards established in CIE S 008-2001.

TC established 2006 originally chairperson: H. Kaplan, followed by L. Bedocs temporarily acting, present chairperson from 2009 Karen Pero

4.3 New TCs established

TC 3-44: Lighting for Older People and People with Visual Impairment in Buildings

Chair: Yukio Akashi (JP) [2007- 2011]

To provide summary recommendations for the lighting provision for older people and people with visual impairment in buildings.

Chairperson changed from G. Cook (GB) to Yukio Akashi (JP) 2010

TC 3-45: Luminance Based Design Approach

Chair: Yoshiki Nakamura (JP) [2007 - 2011]

To determine suitable design factors and criteria for luminance based design, and to produce suitable tools to allow luminance based design to be performed and validated. This will involve a detailed literature search in the area of luminance based design and an examination of the tools for a luminance based design that have been developed or are currently available. The validity of the tools will be undertaken and compared to standard data.

TC 3-46: Research Roadmap for Healthful Interior Lighting Applications

Chair: Jennifer Veitch (CA) [2007 - 2011]

The TC will review relevant CIE publications and the more recent scientific literature to identify the information that is needed before such lighting application may take place. The output will be a technical report which will describe a research roadmap intended to stimulate fundamental research into questions relevant to lighting applications. This technical committee follows from the publication of CIE 158:2004 and the two CIE expert symposia on light and lighting and health in 2004 and 2006.

TC 3-47: Climate-Based Daylight Modelling

Chair: John Mardaljevic (GB) [2008 - 2012]

To describe the state-of-the-art in CBDM and determine levels of research activity; To identify themes in ongoing areas of CBDM research and forecasting of future developments; To identify key areas of core or supporting research which are either lacking or with insufficient activity; To determine key application areas for CBDM and the required data pre-requisites; To codify an authoritative workflow for CBDM that is compliant with agreed quality assurance criteria; To provide guidance on the application of CBDM to predict emerging daylight metrics.

TC 3-48: CIE Standard Method of UF Table Calculation for Indoor Luminaires

Chair: Peter Thorns (GB) [2008 - 2011]

To produce a CIE standard method for the calculation of utilization factor (UF) tables for indoor luminaires.

Revision terms of reference 2010.

TC 3-49: Decision Scheme for Lighting Controls for Tertiary Lighting in Buildings

Chair: Peter Dehoff (AT) [2009 – 2012]

To offer guidelines in order to balance lighting quality, user comfort and energy efficiency in lighting controls solutions for tertiary lighting in buildings (i.e. for commercial, institutional and industrial buildings). To work on a decision scheme with focus on the user requirements (visual comfort, performance, personal control) to determine the most applicable control solution, including the consequences for possible savings. In this, it needs to be assumed that there are no technological or financial hurdles.

TC 3-50: Lighting quality measures for interior lighting with LED lighting systems

Chair: Martine Knoop (NL) [2009 - 2012]

To review relevant CIE publications and standards to evaluate the suitability of existing lighting quality measures when applied to tertiary (commercial) interior light-emitting diode (LED) lighting systems. To identify the gaps and weaknesses in existing quality measures, exhibited in one of two ways: either the criterion is valid, but the evaluation method is not (e.g., colour rendering) or a new criterion needs to be taken into consideration (e.g., overhead glare, binning). To prepare a Technical Report, which will include the findings of the review and recommendations for new lighting quality measures and evaluation methods as well as suggestions for new research if appropriate quality measures and evaluation methods are missing.

TC 3-51: CIE Standard General Sky Guide

Chair: Stanislav Darula (SK) [2010 - 2011]

To finalise a guide for the application of the CIE General Sky standard for general users and designers. The guide will provide an explanation of the CIE General Sky standard concept and its simplified use by practitioners with available references and recommended prediction methods/tools/computer programs.

5. REPORTERSHIPS

5.1 Closed

R3-13 International Lighting Vocabulary (Y. Koga, JP)

The ILV is balloted July 2009, draft for NC comments published in December 2009, end of NC comments June 2010.

R3-23 Lighting Control and Energy Efficiency (P. Dehoff, AT) By contribution of M. Knoop, NL. [2004 – 2010] Terms of reference for a new TC3-49 *Decision Scheme for Lighting Controls for Tertiary Lighting in Buildings, 2009*

R3-24 Overhead Glare (T. McGowan, US) [2004 – 2010] Reported and closed

R3-25 Lighting and Health (M. Fontoyont, FR) Reported and closed 2008

Contribute to the proposal of TC3-46 *Research Roadmap for Healthful Interior Lighting Applications, 2007*

R3-26 Climate Based Daylight Analysis (J. Mardaljevic, GB) [2005 – 2009] The reportership has been superseded by , 2008 and the report is posted at the web site.

R3-27 The CIE method for the calculation of UF (L. Bedocs, GB) [2007 - 2008] Reported Terms of reference for a new TC3-48: *CIE Standard Method of UF Table Calculation for Indoor Luminaires*

R3-28 The Lighting Requirements for Night-shift Workers (M. Knoop, NL) [2007 - 2011]

Final reporting at Sun City 2011

5.2 Proposed reportership

Wikipedia Coordinator – Seeking volunteer

The suggestion is that we have a reporter to develop a list of lighting terms or issues of particular importance to CIE Division 3; to check on how Wikipedia covers them; to add links to relevant CIE material; to edit them to be consistent with CIE knowledge or positions.

6. LIAISONS

CEN TC169 Light and Lighting – L. Bedocs

The standardization work is going on in 11 Work Groups

WG1 Terms of Definition – Revision of EN 12665 is completed

WG2 Lighting of work places – The enquiry of the revised EN12464-1 is completed

WG3 Emergency lighting – Revision of EN 1838 and will include the ISO safety signage format

(WG4 Sports Lighting, WG5 Road lighting, WG6 Tunnel lighting, WG7 Photometry, WG8 Exposure to incoherent radiations, WG10 Characterisation of optical materials)

WG9 Energy requirements for lighting in buildings –

WG11 Daylighting – New work group for harmonising the various daylighting standards in use with EU members. Two different approach; the old metrics respectively climate based modelling.

ISO/TC159/SC4 Ergonomics of Human-System Interactions – L. Bedocs

The main activity is in updating of the multi part standard ISO 9241 dealing with hardware and software components of interactive systems is continuing.

ISO/TC159/SC5 Ergonomics of the Physical Environment – L. Bedocs

Progressing of the standards development for Integrated environments and Environments for people with special requirements is on going. ISO/DIS28803.

ISO TC163/SC2 – Thermal performance and energy use in the built environment / Calculation Methods (Daylight) - Y. Uetani

There is a working group dealing with dynamic fenestration led by Jan deBoer. Methodological discussion are going on.

ISO TC205/WG7 – Indoor Visual Environment – Y. Koga

ISO TC205 is creating a system of International Standards to address the built environment. The main areas of work covered by ISO TC205 are: (1) design of energy efficient buildings, (2) building control systems design, (3) indoor air quality, (4) indoor thermal environment, (5) indoor acoustical environment, (6) indoor visual environment. ISO TC205/WG7 "Indoor Visual Environment" has just finalized ISO/CD 16817

Comment

As a general thing CIE might do better to work on joint committees with ISO to develop standards rather than to just pass documents along and expecting ISO to adopt them. We need better coordination and an urgent matter to have better connections to ISO and more information than short reports from the specific liaisons.

Illuminating Engineering Society of North America – J. Selander

Mr. Selander as our new official liaison officer. Parallel activities in CIE and IESNA e.g. regarding energy efficiency. IESNA has a joint committee with ASHRAE that establishes lighting energy limits for North America, ASHRAE/IES 90.1 – an example of what CIE might try to do with ISO.

Society of Light and Lighting – G. Cook, informal

The big issues in the GB are LED matters, they want to set out the information that designers should specify LED system from suppliers. A lighting guide for daylighting is a major topic of attention right now.

Illuminating Engineering Institute of Japan (IEIJ) - Y Nakamura, informal.

The following new research committees related to Division 3 have been established.

- (1) Preparation committee for IEIJ standard on effect of light on bio-clock
- (2) Research committee on visual effects of LED illumination
- (3) Research committee on OLED illumination guideline

International Dark Sky Association – T. K. McGowan

Professional Lighting Designers' Association – Awaiting new liaison officer.

International Association of Lighting Designers – Awaiting new liaison officer.

World Meteorological Organisation (WMO) – None.

International Energy Agency – None

World Health Organization - None

7. PUBLICATIONS

- Review of Division 3 publications.

The Division 3 Editor has reviewed the list of CIE publications from Division 3 and read all of them currently available. The list of publications included:

Technical reports; 22 and after reviewing and updating 19.

Standards; 3 and after reviewing reduced to 2.

Proceedings; 3 and no one withdrawn.

Documents from reporters; 6 and no one withdrawn

Disks; 1 and after reviewing none

The following technical report has been published:

- CIE 190:2010 Calculation and Presentation of Unified Glare Rating Tables for Indoor Lighting Luminaires (from TC3-42)

The following report has been published at the D3 website:

- R3-26 Climate-based Daylight Analysis (J. Mardaljevic)

Division 3 contributed to publication of:

- CIE DS 017.2/E:2009 - ILV: International Lighting Vocabulary

8. FUTURE DISCUSSION

Energy Efficiency balanced to Lighting Quality

It is today an increasing understanding of the importance of good lighting quality in our everyday environments as well as in architectural lighting. The lighting area is extending and in the future there is an increasing need of scientific based knowledge for the planning of our environments. Lighting is an *interdisciplinary* topic based on the knowledge of lighting qualities, related to human being's perceptual and photo-biological requirements.

The current perspective is holistic and emphasis on design, centred on the man – light interaction. This implies that the fundamental concern of lighting is to understand how light affects consciously and unconsciously on our perceptual visual conditions, behaviour, alertness and well-being.

Application of Dynamic lighting

Current technology gives possibilities for a dynamic control of the light related to daylight variations *The problem is a lack of knowledge* about the criteria for the programming related to human requirements.

This is an urgent research area that has to be examined in the near future.

Smart technology concerning control system, light sources and ballasts makes it possible to relate the artificial lighting in relation to the character of the building, different activities, daylight conditions, etc. The technology makes it possible to control light intensity, colour temperature and system for colour changing. The lighting control system is also an efficient tool for reducing the energy consumption.

Energy Sustainability and Technology

Energy efficiency and sustainability is general political decisions that effect on the lighting design solutions. The energy consumption must decrease and ecological considerations will be even more important in the future. The demands are not new and an experience is that energy regulation can effect in both more efficient solutions and better lighting quality *by relevant knowledge*.

Smart technology concerning control system, light sources and ballasts makes it possible to relate the artificial lighting in relation to the character of the building, different activities, daylight conditions, etc. The technology makes it possible to control light intensity, colour temperature and system for colour changing. The lighting control system is also an efficient tool for reducing the energy consumption.

A more holistic attitude to the work has increased the complexity in the planning and *the traditional methods are inadequate*, related to human requirements. *The challenge* in the future is to consider the human beings all needs and requirements perceptual, biological, psychological and cultural.

Jan Ejhed
Division 3 Director
KTH STH (Royal Institute of Technology) Stockholm Sweden
2011.03.15

CIE/USA – Report to Division 3

CIE Division 3 – 2011 Meeting, Sun City, South Africa

This is a report on the activities of CIE/USA Division 3 since the 2010 meeting in Vienna.

The CIE/USA, like CIE organizations in all countries in the industrialized world, is responding to the growing need to provide technical, performance and application information about the use of LEDs. At the moment, the focus is on standards and testing with new organizations such as Underwriters Laboratories (UL) gearing up to do lamp and luminaire performance testing in addition to their traditional fire and electrical safety testing. New photometric laboratories are being built to test LED luminaires – especially those intended for domestic lighting -- where luminaire photometry has not been the usual practice.

The CIE/USA is working with the Illuminating Engineering Society, the National Electrical Manufacturers Association (NEMA) and the American Lighting Association (ALA) on updates or new testing standards for LEDs and coordinating with the CIE on matters such as photobiological safety.

As part of these efforts, the CIE/USA organized two one-day technical meetings. The first was in conjunction with the Annual Meeting of the IES in November of 2010; the second coincided with Light Fair International, a large lighting trade fair held this year in Philadelphia in May. Titled “CIE/USA Seminars on Photometry, Colorimetry and Applications of Solid-State Lighting”, the topic list included:

- Fundamentals of Photometry and IESNA LM-79
- Fundamentals of CIE Colorimetry and Color Measurements
- Color Quality of Light Sources
- Importance of Terminology – New ILV Edition and RP-16
- Application of SSL Technology in Roadway and Street Lighting
- Mesopic Vision – Review and Application of CIE 191:2010
- LED Outdoor Lighting and Dark Skies
- Photobiological Effects of Optical Radiation
- Blue Light Hazard Research
- Flicker: Risks, Metrics and Applications
- Summary of Laboratory Accreditation Related to SSL

Both meetings were well attended and helped to introduce and familiarize the work of the CIE to the many new companies and individuals now involved in SSL lighting products and technology.

Your attention is called to the publication of a comprehensive new North American lighting reference, the IES Lighting Handbook, 10th. Edition, which is available starting this month. It replaces the 9th. Edition published in 2000 and was written and reviewed with the help of numerous CIE and CIE/USA members.

Regretfully, the undersigned is not able to attend the Division meeting in Sun City; but sends congratulations to our colleague and friend Jennifer Veitch as she moves from Division Secretary to Division Director and best wishes to the participants of Division 3 for a productive session.

Terry McGowan
CIE/USA Division 3 Member
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07/03/11

Workshop on the elderly and visually impaired people
The 27th Session of the CIE, Sun City
Wednesday, July 13, 2011
Agenda (Draft)

Time	Topic	Presenter
11:30 AM	Opening, introduction	Cyril Chain
11:35 AM (10 min.)	<p>Review of visual changes with age and the vision of people with visual impairment</p> <p>Attendees may first want to understand differences in visual systems between young and older (and visually impaired) people.</p> <ul style="list-style-type: none"> ● Visual changes (optical and neural changes, e.g., smaller pupil size, lens yellowing, ...) ● Visual impairment (cataract, macular degeneration,...) 	Ken Sagawa
11:45 AM (15 min.)	<p>Research update: vision and performance</p> <p>This session updates fundamental research on the vision and visual performance of the elderly and visually impaired people, compared with young people with normal vision in terms of;</p> <ul style="list-style-type: none"> ● Contrast sensitivity ● Color appearance (colors difficult for the elderly to distinguish) ● Smallest font size that can be read ● Visual performance ● Preferred illuminances for various activities 	Nana Itoh
12:00 AM (15 min.)	Research update: outdoor lighting for the elderly and people with visual impairment	Cyril Chain
12:15 PM	<p>Discussion 1: Lighting requirements</p> <p>Because of the limited time, maybe, this session should focus on around three topics, e.g., illuminance requirements, glare control, and light & health.</p> <p>Older adults and visually impaired people usually need higher illuminances. However, a higher illuminance often results in a more serious glare sensation. It is important to come up with potential solutions for such antithesis requirements.</p> <p>The influence of light on human biological clocks is one of the hottest topics. Since older adults and visually impaired people stay in buildings longer than young people, controlling luminous intensity and spectral power distribution of artificial lighting becomes more important.</p> <p>Although we have already noticed how important these factors are, we do not have appropriate practical solutions. Therefore, it is important to discuss whether we will be able to reach a solution for each of the topics and how to reach the solution.</p>	
12:15 PM (10 min.)	<p>Illuminance and performance</p> <p>First, it is important to understand the current illuminance requirements and regulations for the elderly and visually impaired people. To this end, it is useful to compare international and national standards although this will need some preparations.</p> <p>Second, there are several models of visual performance, e.g., the relative visual performance model and the visibility model. By using</p>	All

	<p>those models, it is useful to simulate and identify illuminances necessary for the elderly. (Unfortunately, there may be no such models for visually impaired people.)</p> <p>Finally, this session attempts to figure out whether it is possible to reach consensus on illuminance requirements for the elderly and visually impaired people.</p>	
12:25 PM (10 min.)	<p>Glare control</p> <p>There are a few disability and discomfort glare formulae in each of the application fields. Some of those models already have aging factors. Therefore, it is useful to compare those formulae and aging factors between different application fields. This comparison will also identify how sensitive older adults are to glare than young people.</p> <p>Then, this session should discuss whether it is possible to reach consensus on glare requirements for the elderly and visually impaired people.</p>	All
12:35 PM (10 min.)	<p>Light and health</p> <p>Recent research showed that to maintain healthy sleep and wake cycles people need high circadian stimulation during the day and low stimulation at night. So do older adults and visually impaired people.</p> <p>Recent research also demonstrated that circadian stimulation at an appropriate time increased sleep consolidation and efficiency in older subjects.</p> <p>It is important to discuss whether to identify practical lighting solutions for healthy biological rhythms of older adults.</p>	All
12:45 PM	<p>Discussion 2: Terms of reference for the new inter-divisional TC</p>	All
1:00 PM	<p>Adjourn</p>	

Report to CIE Division 3
From
The International Dark-Sky Association
<http://www.darksky.org>

Terry McGowan*, CIE Division 3 Liaison Member**
July 3, 2011

The International Dark-Sky Association (IDA) remains focused on efforts to reduce light pollution from indoor and outdoor lighting which results in sky glow, light trespass, glare, unwanted environmental effects and wasted light which, of course, represents wasted energy.

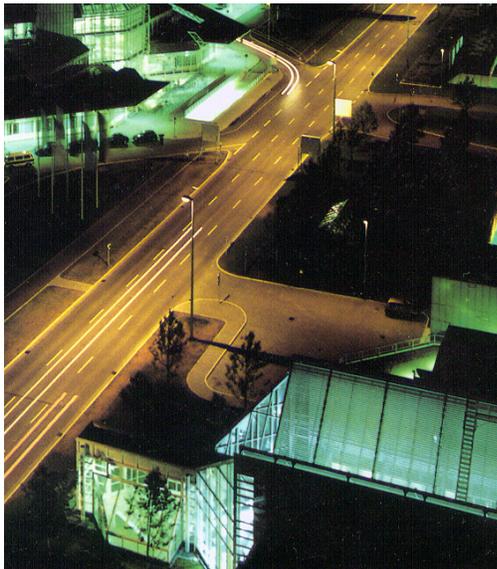
Joint work between IDA and the Illuminating Engineering Society of North America (IES) has resulted in the approval and publication of a Model Lighting Ordinance (MLO) which is designed to reduce light pollution and the other negative effects of excessive and uncontrolled light on the outdoor night environment. The MLO is intended to be a template offering those who wish to develop standards, legislation or policy documents a starting point and a menu of options using agreed-upon definitions, recommendations and language.

The IDA/IES MLO can be downloaded here:

http://docs.darksky.org/MLO/MLO_FINAL_June2011.pdf

A feature of the MLO is the practical “User’s Guide” which is included alongside the MLO text.

While this first version of the MLO does not include language relating to the light pollution effects of interior lighting escaping from buildings, there is growing concern within the IDA that such effects should be considered and recommendations for control developed. The MLO is expected to be revised on a regular 3-year schedule and so the IDA is asking Division 3 if the control of light emitted from buildings at night, especially from daylighted buildings, should be on the agenda of Division 3 and its appropriate TCs in order to consider the subject in CIE reports and recommendation and to take Division 3 thinking into account in the first revision of the MLO.



As can be seen in every urban area, commercial buildings at night emit substantial amounts of uncontrolled light from interior lighting. According to the IDA, this light is 10-20% of light going into the sky depending upon the area, but that percentage is expected to increase as outdoor roadway and area lighting become better controlled via optical shielding, limited hours of operation and the use of LED light sources. IDA concerns go beyond the emission of light itself because of the spectral make-up of the emitted light. As reported to you last year, research and comprehensive reports from the U.K. Royal Commission¹ on environmental pollution as well as the IDA² have documented worrisome environmental effects from blue-rich white light such as that emitted from

fluorescent, metal halide and white-light LEDs which use phosphors activated by blue-emitting LED chips. The concerns, which apply primarily to blue light with wavelengths of 500 nm. and shorter, are based upon the circadian action spectrum of living things which peaks in the range of 450-460 nm.

The IDA continues to follow the work of Division 3 with interest especially that work which deals with light and human health and that includes the work of TC3-46. (Research Roadmap for Healthful Interior Lighting Applications).

And, of course, the IDA appreciates this continuing liaison with CIE Division 3.

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**The purpose of this Division 3 liaison is to:

1. Exchange information about the subject of light and human health and especially those health effects involving light at night where that light might come from outdoor lighting.
2. Work together to minimize the energy waste, light pollution and environmental problems that result from building interior lighting escaping into the outdoor environment.

References

¹Royal Commission Report on Environmental Pollution: “Artificial Light in the Environment”.
Download available at:
<http://webarchive.nationalarchives.gov.uk/20091118223441/http://www.rcep.org.uk/reports/sr-2009-light/sr-light.htm>

²International Dark-Sky Association. “Visibility, Environmental and Astronomical Issues Associated with Blue-Rich White Outdoor Lighting”.
Download available at: <http://docs.darksky.org/Reports/IDA-Blue-Rich-Light-White-Paper.pdf>

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IES President 2010-2011

Report to Division 3 – CIE 27th Session
Sun City, South Africa – July 13, 2011

It is again a privilege to be with you for this session of the CIE in beautiful Sun City. As the current official IES liaison to Div 3, it is my pleasure to report both directions, to and from the IES. Here is a synopsis of what has been happening at the IES in North America during the past year.

I. New Publications:

The 10th Edition of the IES Lighting Handbook has finally been published and is now being shipped to all early subscribers. It is 1370 pages, four-color, and includes over 600 illustrations. It weighs in at over 11 lbs!

Current Published IES Recommended Practices:

- RP-1 Office Lighting
- RP-2 Merchandising Areas
- RP-3 Educational Facilities
- RP-4 Library Lighting
- RP-5 Daylighting
- RP-6 Sports
- RP-7 Industrial Facilities
- RP-8 Roadway Lighting
- RP-11 Interior Living Spaces
- RP-16 Nomenclature and Definitions
- RP-20 Parking Facilities
- RP-22 Tunnel Lighting
- RP-27 Photobiological Safety
- RP-29 Lighting for Hospitals
- RP-30 Museum Lighting
- RP-33 Exterior Environment
- RP-39 Landscape Lighting

For any documentation inquiries, please go to www.ies.org/store

II. Published or coming very soon:

- An Outdoor Model Lighting Ordinance (Joint Sponsored with the International Dark Skies Association) Approved June 2011
- TM-15 A New Outdoor Luminaire Classification System (approved February 2011).

- TM-21 Projecting Long Term Lumen Maintenance of LED Light Sources (a supplement to LM-80 for luminaire manufacturers; at the IES Board for ballot as of 27 June, 2011).

III. Director of Public Policy Hired:

Bob Horner, Director, IES Public Policy, rborner@ies.org

Bob's mission is to plan, develop and coordinate the North American public policy interests of the IES.

- Position IES as an advocate for quality lighting among the public
- Position IES as an advocate for quality lighting among Governmental entities
- Position IES as the "Lighting Authority" for all legislative and regulatory activity
- Establish active, working relationships with other industry organizations
- Focus on Buildings, not Products
- Advocate to (and to educate) the federal government regarding new measures of energy efficiency that promote good lighting design and/or application

IV. New Educational Seminars: These are modular courses on a particular lighting topic that may be appropriate for an individual Section Meeting or when coupled with other modules will make up a new entire lighting course.

- Fundamentals of Lighting (FOL)
- Planned Indoor Lighting Maintenance
- Codes & Standards
- Lighting Economics
- Lighting Controls

New Seminars "On the Boards"

- Lighting Design Process
- Lighting Metrics
- Daylighting
- Light & Human Health
- Lamps & Ballasts
- Vision & Color
- Luminaire Design & Optics
- Electricity

V. Member and Community Outreach: The IES Board has decided to become more engaged with our nearly 9000 members through the use of some new media types of outreach. One of the new Board committees proposed in the new IES Strategic Plan will be an outreach effort, both to members but also others in the public interested in making informed decisions about lighting and energy use.

A Lighting Information Center still has yet to be created to deliver accurate lighting information to new media and social networking sites as the public has interest in lighting and energy related topics. There is much misinformation and commercially biased, unvetted documents available, not coming from the IES.

Stay Connected With IES

[LinkedIn](#) - [Facebook](#) - [Twitter](#)

LD+A Magazine e-Report

IES e-Newsletter

LEUKOS – the IES Lighting Journal has a new editor. Kevin Houser, PhD has replaced Professor David DiLaura as Editor
LEUKOS Online

Public Policy

[New Reports Chart Path to Net-Zero-Energy Commercial Buildings](#)

Webinars

[DOE Commercial Lighting Solutions: Overview](#)
[Daylighting Fundamentals](#)

VI. Upcoming Conferences:

IES Street and Area Lighting Conference 18 Nov, 2011 New Orleans
IES Annual Conference 31 October, 2011 Austin, TX
LIGHTFAIR 9 May, Las Vegas, NV

VII. Position Statements: The IES has established two new methods of communicating timely information to our constituents, especially to be able to quickly send a message when legislators and the public are, in the IES view, being misled by special interest groups. These timely documents are either a one-two page Position Statement or a rather lengthier White Paper.

Currently, PS 1, 3, 4, and 5 are published on page one of the IES homepage. An IES Position Statement reflects the current viewpoint of the Society on an evolving issue which is important to its constituencies. All PS documents are dated and are reviewed at least bi-annually by the Board of Directors for continuance, revision, or removal.

Board Knowledge Committee is currently evaluating a position paper on the relative safety of CFL and LED consumer products designed to replace incandescent. High levels of electro-magnetic fields as well as mercury have caused some to want to hold off on a complete governmental ban on standard wattage incandescent lamps. LED Standardization is also a potential topic for an additional PS and Daylighting Integration may be a third.

Respectfully yours,

John R. Selander, LC