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Comité Luminotécnico
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Division 4: Lighting and signalling for transport

(P. Walraven)

The terms of reference for Division 4 are: To study lighting and visual signalling and information requirements of transport and traffic, such as road and vehicle lighting, delineation, signing and signalling. All types of public roads, road users, vehicles and visual aids for modes other than road transport are included.

In practice the work is mainly concerned with road transport and traffic. The strategy of the Division is however to give also adequate emphasis on relevant problems in railways, in aviation and in the maritime area. In practice the terms of reference divide into road and tunnel lighting, vehicle lighting, visual signalling and fundamentals. In the area of road and tunnel lighting several issues can be mentioned: A report on "Design methods for road lighting" is almost finished. TC's are working on revisions of earlier publications, such as "Lighting of roads for vehicles and pedestrians" and "Road signs"; "Quality criteria for tunnel lighting"; "Systems for measurement of photometric quantities of road lighting installations"; "Visibility design for roadway lighting". A TC is revising the publication on "Tunnel lighting", also including practice from many countries on the operation of tunnel lighting. A workshop is planned for 1999 to discuss the outcome of these studies on tunnel lighting.

These issues are related with recommendations for lighting roads. At the recent meeting of the Division in Durban a suggestion was made, and accepted, to organise a workshop on the practice of decision making on lighting of roads. CIE has limited, up to now, its task in recommending lighting in terms of level, uniformity, glare-restrictions, etc. once a decision is made to illuminate a road.

The intention is now to recommend lighting parameters in relation with the requirements set by both road safety and traffic parameters, like traffic density, weather and road configuration.

The idea to direct the attention of the CIE to this item is also influenced by a decision made at the CIE meeting in New Delhi to develop recommendations for lighting of roads in developing countries.

IN THIS ISSUE

Division 4 – News from the Divisions – New publications – Meeting reports – Future meetings – Liaison – From the lighting journals – For your diary

A TC is working now on this item. On the basis of the properties of the eye there should be no difference in the requirements in developing and developed countries. But the differences are related to the different traffic properties, and different road configurations. A workshop on this item will be held at the next Division meeting in Bath, UK. At the Durban meeting it was decided to establish a TC on "Retroreflection of traffic signs", which will define the requirements of retroreflective material used in traffic signs from the standpoint of the driver. Up to now requirements were defined by the properties of existing materials.

Closely connected with the road as such are studies on the "Road surface reflection characteristics", where the TC involved is completing its report. Studies concerning visual functions in driving situations are "Visibility in fog"; "Conspicuity of traffic signs and signals" and "Discomfort glare in road lighting". These studies have a larger application field than only for the driving situation. The work on "Revision of guide to lighting in urban areas" is also of such a general nature. The report of the committee will be published shortly. In connection with this item it is worthwhile to mention a suggestion made at the Durban meeting to study the relation between crime, the feelings of safety and lighting. A reporter will be named to prepare this item for future work. "Colours of signal lights" is also of a general nature. A report on this has been published, and a standard is approaching completion. Other studies of this nature are "Colour vision standards for transport" and "Surface colours for traffic signs", the latter being a revision of a previous standard. A joint CIE/ISO standard on "Road traffic lights of 200 mm diameter" has been approved by the Division, and will be sent for NC vote shortly. It is to be expected that a similar standard will be prepared for 300 mm diameter traffic lights. The work on automobile lighting is for a great deal delegated to GTB, the Groupe de Travail de Bruxelles, a working group in which CIE, ISO and IEC are co-operating. The task of CIE remains to define the scientific basis in favour of or against specific vehicle light solutions taking into account wider visibility and road safety studies.

Work of another nature is that of a TC named "Interference of public lighting with astronomical observation". A report on sky glow has been published, and was received by the astronomical world with great enthusiasm.

It is obvious that the Division covers a wide field, and with promising results. The main emphasis is still on road related issues. Attempts are made to extend the activities to other areas of transport.

Pieter L. Walraven, Director of CIE Division 4

NEWS from the Divisions

The following items have been summarized from full Activity Reports and Meeting Minutes received at the Central Bureau. Readers requiring more information are kindly requested to contact their National Division Representative through their National Committee.

Division 2 - Physical Measurement of Light and Radiation

The following new TC has been established:

TC 2-44: *Vocabulary Matters* (Chairman: Mr. John Moore, UK)

Terms of Reference: To provide liaison between Division 2 and TC 7-06 "Lighting Terminology" and support the preparation of the new edition of the Lighting Vocabulary in the field of light and colour measurements.

The next meeting of Division 2 will take place from 18 to 19 May 1998 at NIST, Boulder, CO, USA, in conjunction with CORM '98 (20 - 21 May). Some TCs will also have their meeting there.

Division 3 - Interior Environment and Lighting Design

The next meeting of Division 3 will take place on 8 May 1998 in Ottawa, Ontario, Canada. From 9 to 10 May, the First CIE Symposium on Lighting Quality will be held, organized by Division 3. (See announcement in CIE NEWS 44)

Division 6 - Photobiology and Photochemistry

The following new TC has been established:

TC 6-45: *Optical Radiation Hazard Measurements in the Workspace* (Chairman: Mr. Alex Ryer, US)

Terms of Reference: To examine the methods of measurement and the required accuracy of field instruments and broad-band meters to measure the optical radiation hazards in the workplace. Emphasis is on UV and blue light hazards. To develop approved (recommended) methods for measurement of UV, visible and IR in the workplace.

Division 6 has now established a web page at:

<http://129.6.177.5/cie/>

In September 1998, Division 6 will organise, together with the USACHPPM, ICNIRP and NIST, an international Symposium on "Measurements of Optical Radiation Hazards" (see p. 7 of this CIE NEWS issue).

NEW PUBLICATIONS

Proceedings of the CIE Symposium 1997 on Standard methods for specifying and measuring LED characteristics

CIE x013-1997

ISBN 3 900 734 85 2

Currently there is considerable effort within the LED industry and the community who use LEDs to standardise on LED characterisation and measurement. CIE TC 2-34 *LED Measurements* completed its report on the subject (published as CIE 127-1997 *Measurement of LEDs*). The CIE 1997 Workshop and Symposium, held on 22-25 October 1997 at the CIE Central Bureau, Vienna, Austria, introduced the CIE recommendations

on LED measurements and dealt with the underlying radio-metric, photometric and colorimetric measurements. Health aspects of LED radiation were also discussed.

The goals of the meeting were:

- to introduce the recommended CIE method for characterising LEDs,
- to share information on the technical content and status of projects involving the characterisation of LEDs,
- to identify areas where existing/proposed industrial methods are divergent and to initiate discussion towards resolution,
- to identify areas requiring new technology or knowledge and
- to recommend needed activities of CIE and industry to provide the necessary solutions.

Papers were read on the following subjects:

- New LED technologies,
- Industrial measurements,
- Safety issues of LEDs and other light sources, eye hazards,
- LED lighting products, the use of LEDs in modern lighting applications,
- Measuring new LED products, laboratory and industrial measurements,
- LED measuring devices.

The Proceedings contain the text of the 12 papers read as well as a report on the roundtable discussions.

The publication contains 85 pages, and is readily available from the CIE National Committees or from the Central Bureau of the CIE in Vienna.

New publications in the field of light and lighting

Vision in Vehicles - V

Ed.: AG Gale, ID Brown, CM Haslegrave, SP Taylor, Elsevier - 1996

The book contains papers presented at the 5th International Conference on Vision in Vehicles, held at the Kelvin Conference Centre, University Glasgow, in 1993.

The papers printed in this book have been grouped into nine chapters.

Chapter 1, Simulation studies of driver performance contains six papers, discussing different driving simulators and comparing driving performance in the simulator with the performance on real roads. Both the question of using driving simulators in driver tests and in research are covered by the papers.

Chapter 2 contains five papers dealing with visual

processing and collision avoidance. Also in this chapter papers describe simulator experiments, showing the ever increasing importance of computer based visual aids. Both in this chapter and the following one (Cognitive aspects of visual information processing, seven papers) most of the papers deal with cognitive aspects and visual - motoric interaction effects.

The paper by Bruyas and co-workers has direct relevance to CIE Division 4 activity: Recognizing and understanding pictograms. Here also the importance of colour coding was investigated.

CIE recommendations have drawn the attention on the importance of daytime headlight long ago. A paper by Hole and Tyrrell points out that in countries where the use of daytime headlights for motorcyclists is still not compulsory, the motorists driving without light are in an endangered situation.

Chapter 4, Visual requirements of in-vehicle guidance systems (7 papers), deals with questions like central versus peripheral information displays, visual distraction of drivers with in-vehicle equipment. In-vehicle message screens become more and more used. Experiments have shown that for a driver in traffic situation such a screen should not contain more than four information units.

Driver support systems (Chapter 5) are dealt with in five papers, ranging from monitoring cameras through different feedback systems (e.g. active steering wheel) till train and cockpit applications.

The Chapter on Visual performance in degraded visibility (Chapter 6) contains four papers, and discusses items such as vision enhancements systems for driving in fog, the influence of the car headlight luminous intensity distribution on night-time signal visibility.

Chapter 7, dealing with driver's visual impairment (seven papers) has direct relevance to CIE's Low Vision study. One of the papers showed that drivers handicapped by a cataract had significantly poorer driving performance compared to the age matched normal group. The paper by Garry ("Vision and the signing needs of older drivers") should be consulted by the CIE TC dealing with signing questions. Both day-time and night-time legibility tests were conducted. Another paper discusses the effect tinted windscreens might have on visual acuity and contrast sensitivity reduction due to absorption in case of night-time luminance situations.

In glare situations multi-anti-reflection coatings on spectacle lenses can improve contrast sensitivity. The introduction of HID lamps in motorcar headlamp systems can increase discomfort glare that has to be considered in designing such lighting systems.

Chapter 8, Visibility restrictions and vehicle control, features four papers. This chapter dealt with situations outside of normal traffic situations, such as material-handling vehicles, mining vehicles, industrial vehicles as well.

The last chapter (9) dealt with arousal and visual performance (2 papers), both papers address the

problem of alcohol ingestion and driving and show the negative effect of alcohol consumption even if only amounts permitted in legislation are consumed.

The Vision in Vehicles conferences always contain many papers of interest for CIE Division 4 and 5 experts, but also for those dealing with fundamentals. This referee tried to draw already the attention of CIE Experts onto this series of meetings, unfortunately without much success. Thus he would like to encourage CIE Members to read this book and to participate in future Vision in Vehicles meetings, getting CIE information out to other groups of similar interest and to learn about the needs and solutions others have achieved.

The German National Committee has informed us on their new publication LiTG Nr. 15:

Effect of outdoor lighting on night-active insects

This publication is written in German, it contains 24 pages and is available at:

Penny-Dialog-Marketing, Heinrich-Krumm-Str. 6, D-63073 Offenbach (tel.: (+49 69) 98955 127, fax: (+49 69) 98955 198).

New CIBSE Lighting Guide

The Chartered Institution of Building Services Engineers (CIBSE) has just released Lighting Guide 9: *Communal residential buildings*. Written for all those who manage, operate, maintain or design communal residences, the new guide LG9 covers the lighting and decoration of flats and residential buildings, including student residences, staff accommodation in hospitals, nursing homes and hospices, residential homes for the elderly or people with special needs, community homes and hostels, schools, barracks, and secure accommodation.

Lighting, whether natural or artificial, is of fundamental importance in such places because it largely determines the "atmosphere" in a building. Good lighting also minimises the risk of accidents attributable to poor lighting, and possible resulting legal claims. The cost of providing lighting in extensive premises is another important consideration.

Written in non-technical language, and supported by a glossary of technical terms, LG9 offers guidance on these and other issues, in relation to both new and existing buildings.

A section is devoted to site planning and the availability of daylight. LG9 provides detailed requirements for electric lighting for many types of area in communal residential buildings. Lighting and decoration have so much bearing on each other that they should be considered together, and so there is a section on colour and decoration. Further sections cover energy efficient lighting systems and lighting maintenance, emergency lighting, and relevant

legislation and standards. Appendices are included and address the choice of lamp type and colour rendering.

The publication is available from:

CIBSE Publications Sale
222 Balham High Road
London SW12 9BS, UK
tel.: +44 181 675 5211
fax: +44 181 675 5449

Applied Photonics

by **Chai Yeh**

Academic Press, 1994 ISBN 0-12-770458-2

Illuminating engineering is a subject frequently dealt with in electrical engineering departments, sometimes in architecture or civil engineering. The illuminating engineer gets confronted more and more frequently with other uses of his fundamental subject, light. Here is a book that permits us to get an introduction into these other aspects of using light, or more properly optical radiation.

The author states that his book is "intended to provide state-of-the-art information in the field of photonics for practising engineers and scientists with college-level training in fundamental science and mathematics", a technique much enjoyed by your referee as well.

After a short introduction the book discusses fundamental photon and matter interaction, semiconductor and other laser technology, photonic detection and optical amplification, soliton physics and application, photonic components of optical information processing in 14 well written chapters.

It can be very much recommended to CIE enthusiasts to read this book if they wish to get some insight into other use of our fascinating subject light.

Optical Measurement Techniques and Applications

ed. PK Rastogi, Artech House, 1997
ISBN 0-89006-516-0

This is another book we can recommend to CIE fans to broaden their knowledge on other use of optical radiation than lighting and signalling. 16 experts contributed to this book, and as in every book containing a number of monographs, the texts differ somewhat, although one has to congratulate Dr. Rastogi, editor of the book, for getting the material into a reasonably homogeneous form. The items discussed in this book extend our knowledge gained in the previous one. Chapters are dealing among other items with optical testing, digital fringe analysis, holographic interferometry, speckle metrology, moiré effects, fibre optic sensors, optical velocity and surface roughness measurement, digital image processing, etc.

The book can be recommended for continuing education courses or as a self-study manual.

Meeting Reports

CIE 2nd Expert Symposium '97 Colour Standards for Imaging Technology

**21-22 November 1997
Scottsdale, Arizona, USA**

CIE has completed a successful Symposium on Colour Standards for Image Technology in Scottsdale, Arizona, last November. One of the clear messages from the Symposium is that the image technology community is looking to the CIE for leadership in the field of colour standards. Currently, a large number of different organisations are involved to some extent in developing colour standards for image technology but the efforts are fragmented and uncoordinated, leaving potential users confused and frustrated. Despite significant criticism of the CIE for being slow and cumbersome, there was a very clear consensus that the CIE is the best organisation to take the lead because of its established history and authority in the field of colour standardization.

There was a lot of discussion about how this could be made to happen and the possibility was suggested that the CIE might establish a new Division to deal with image technology applications. This was greeted with great enthusiasm and was endorsed explicitly by representatives of some of the major companies (Hewlett-Packard, MicroSoft, SGI, and Xerox). Alan Robertson was entrusted with the task to explore the possibility with the CIE Board of Administration and also, assuming the Board agrees, to work with an ad hoc group of industry representatives to draft terms of reference for such a new Division. There was concern that the process of establishing the Division and starting its work should be done quickly. Therefore later it was suggested that first a Subcommittee of the Board should deal with the question. This is now under establishment.

The Proceedings of the Symposium will be published shortly.

Future meetings

7th International Conference Lamps and Lighting

**14 May 1998
Maribor, Slovenia**

This conference is organized by the Slovenian Lighting Engineering Society and registered with the UN as part of the Energy Efficiency EE 2000" Project.

Papers are expected on the following topics:

- energy efficiency strategies and programmes
- initiatives and instruments for achieving a higher energy efficiency in lighting
- energy efficient lighting for working areas with CRT displays
- international, regional and national lighting standards.

Official languages: Slovene, English and German.

For further information please contact:

Slovensko drustvo za razsvetljavo

Vetrinjska 16/l

SI-2000 Maribor, Slovenia

tel.: +386 62 27 921

fax: +386 62 227 692

e-mail: light.eng@uni-mb.si

CORM '98

Annual Conference and Business Meeting

20 - 21 May 1998

with joint CIE Division 2 Meeting

18 - 19 May 1998

Boulder, Colorado, USA

CORM '98 meetings include sub-committee meetings, the main technical conference and the annual business meeting. The conference will include a session to address progress with International Radiometry and Photometry Standards. There will be a double session dedicated to the topic of Optoelectronics.

The conference coordinators are:

William L. Weber

c/o Gretag Macbeth

617 Little Britain Rd.

New Windsor, NY 12553

e-mail: WillLWeber@aol.com

and

Norbert L. Johnson

c/o 3M Company

3M Center 235-3B-55

St. Paul, NM 55144-1000

fax: 612-733-6211

e-mail: nljohnson@mmm.com

Light '98

1-3 June 1998

Ostrava, Czech Republic

This international conference is organized by the Czech Lighting Society, the Faculty of Electrical Engineering and Informatics, VSB-Technical University of Ostrava, and the Regional Hygienic Station of Ostrava.

The conference sets as its objective to present trends in the fields of theory and practice of lighting technique in the Czech Republic and abroad.

The conference is directed towards hygienic aspects of lighting, light sources and lighting fittings, trends in the area of hygienic, light and electrotechnic norms and rules, lighting rationalization from the point of view of

power engineering, ecology in the sphere of light sources, exterior and interior lighting, utilization of computer art, lighting measurement and others.

The conference is intended for users, investors, designers, architects, hygienists, lighting operators and general public in the field of lighting.

An exhibition will be organized as part of the conference, where leading domestic and foreign firms concerned with lighting technique and related fields will participate.

Working language: Czech, English, German, Slovak.

For further information, please contact:

RNDr. Marie Juklova

Krajska hygienicka stanice

Partyzanske nam. 7

728 92 Ostrava 1

Czech Republic

tel.: 0042069 6118505

fax: 0042069 211988

Optical Spectrometry: Applications and Instrumentation into the 21st Century

28 June - 2 July 1998

Surrey, UK

This three day conference is jointly organised by the Council for Optical Radiation Measurement (CORM) and the Ultra Violet Spectrometry Group (UK). The conference will address optical spectrometry in the UV, visible, NIR and IR regions of the spectrum and will include reflectance, colour, transmittance, fluorescence and luminescence techniques. Particular emphasis will be placed on analytical applications, instrumentation, validation and standards.

The conference targets analysts, chemists, biochemists, material scientists, QA officers, standards institutions and instrument manufacturers who need to keep abreast of current advances in standards and the applications of optical spectroscopic techniques.

Keynote lectures will be given on:

- measurement standards and validation
- reflectance and colour
- instrumentation and applications.

There will be a series of open discussions organised together with a trade exhibition.

For further information please contact:

Dr. Mary Barnard

The Pines, Larch Avenue

Ascot SL5 0AW, UK

tel./fax: +44 1344 21485

1998 Annual Conference of the Illuminating Engineering Institute of Japan

29 - 31 July 1998

Sapporo, Japan

General sessions on the art, science and practice of illumination and radiation including:

- vision and colour
- radiometric or optical properties of materials
- actinic effects of optical radiation and application
- light sources
- luminaires and lighting electronics
- fundamentals of lighting and daylighting
- lighting design and application
- optical devices, sensors and displays.

For further information, please contact:

Illuminating Engineering Institute of Japan (IEI-J)

Shomei Gakkai Suitaya Bld.

8-4, Kandatsukasa-cho 2-chome

Chiyoda-ku, Tokyo 101-0048, Japan

tel.: +81 3 5294 0101

fax: +81 3 5294 0102

e-mail: ieijsumu@saturn.netspace.or.jp

LS-8 Greifswald 1998

**8th International Symposium on the
Science and Technology of Light Sources**

30 August - 3 September 1998

Greifswald, Germany

LS-8 continues a series of conferences which originated in the UK in 1975. It will bring together scientists and engineers from the lighting industry, research centres, and universities in order to present and discuss the latest results in basic research and technology for developing light sources. The conference will be organised by the Institute for Low Temperature Plasma Physics Greifswald and the Department of Physics of the University of Greifswald.

The conference will include invited papers, contributed papers, and posters from the following topic areas (among others):

- fluorescent lamps
- incandescent lamps
- HID lamps
- excimer devices
- displays
- materials
- modelling.

For further information, please contact:

Dr. G. Babucke, INP

Robert-Blum-Str. 8-10

D-17489 Greifswald, Germany

fax: +49 3834 554302

e-mail: ls8@inp-greifswald.de

<http://www.physik.uni-greifswald.de/~meyer/ls8>

**International Symposium and Workshop on
Measurements of Optical
Radiation Hazards**

1 - 3 September 1998
Gaithersburg, MD, USA

This symposium will be jointly organized by the Division 6 of CIE, the US Army Center for Health Promotion and Preventive Medicine (USACHPPM), the International Commission on Non-Ionizing Radiation Protection (ICNIRP) and the National Institute for Standards and Technology (NIST).

The conference will promote and address the need for improved, standardized radiometric measurements of optical radiation hazards from ultraviolet, visible, and infrared radiation sources and assessment of protective measures such as sunscreens, clothing, and eye protection. Attendees should include health physicists, industrial hygienists, photobiologists, safety engineers, and lighting engineers.

Conference topics include:

- photobiological basis for risk assessment – action spectra
- photobiological guidelines & standards for health protection and product safety
- measurements needed to apply photobiological guidelines and standards.

For further information or abstract submission, please contact:

Stephen Wengraitis
USACHPPM Laser/Optical Radiation Program
MORH, ATTN: MCHB-TS-OLO
APG, MD, USA 21010-5422
tel.: (+1 410) 671-5051
fax: (+1 410) 671-5054
stephen_wengraitis@chppm-ccmail.apgea.army.mil

**The Sixth Color Imaging Conference:
Color Science, Systems and
Applications**

17-20 November 1998
Scottsdale, Arizona, USA
sponsored by IS&T and SID

As in the past, this year's conference will feature a comprehensive series of tutorials. Tutorials are planned on the following topics:

- fundamentals of colorimetry
- instrumentation, measurement & calibration
- colour appearance models
- colour in hardcopy
- colour in displays
- colour considerations for the internet and web
- colour management systems
- creating CMS profiles
- image quality assessment
- digital colour and tone reproduction

- colour in motion imaging and multimedia

Technical papers will be presented covering the following topical areas:

- colour communication
- colour science
- colour standards
- colour systems
- human colour vision & psychophysics
- colour display technologies
- colour management
- colour in the graphic arts
- colour appearance
- colour image processing
- colour calibration and measurement
- colour scanning and printing technologies
- capture of colour images
- colour in software applications
- colour on the internet and web
- colour in video, motion pictures and television
- colour in digital photography
- colour in visualization and virtual reality
- colour in multimedia

Deadline for abstracts: April 4, 1998

The program will include keynote presentations by noted experts in the colour imaging field, including Dr. R.W.G. Hunt. Generally, the International Color Consortium (ICC) and several standards committees also hold meetings in conjunction with this conference.

For further information and registration, please contact:

IS&T , 7003 Kilworth Lane
Springfield, VA 22151
fax: +1 703 642 9094
e-mail: info@imaging.org

**1st Balkan Lighting Conference and Exhibition
Balkan Light - 99**

6-8 October 1999
Varna, Bulgaria

This conference will give people dealing with light and lighting, from the Balkan countries as well as from all over the world, the opportunity of sharing knowledge and experience. Abstracts are requested by 1998-12-01 on the following themes:

- energy efficiency in lighting
- vision and colour
- physical measurements of light and radiation
- interior environment and lighting design
- lighting and signalling for transport
- exterior and other lighting applications
- photobiology and photochemistry
- general aspects of lighting.

An exhibition of lighting products will also take place along with the conference.

For further information, please contact:
Assoc.Prof. Dr. Eng. Christo Vassilev
Chairman of Bulgarian National Committee on
Illumination
108 Rakovsky Str., POB 431, BG-1000 Sofia
tel.: (+359 2) 65 09 40, 65 09 55
fax: (+359 2) 65 48 83, e-mail:denima@omega.bg

Liaison Matters

IEC/TC 34 has sent us the following information:

34A/797/CDV

Draft revision of IEC 60432-2: Safety specification for incandescent lamps - Part 2: Tungsten halogen lamps for domestic and similar general lighting purposes (parallel IEC CDV/CENELEC enquiry)
Deadline for vote: 1998-06-30.

34A/800/NP

Proposal of the Secretariat: Draft amendment to IEC 60810: Performance requirements for gas-discharge light sources
Deadline for comments and vote: 1998-04-30.

34A/801/CD

Draft IEC 62035: Discharge lamps (excluding fluorescent lamps) - Safety specification
Deadline for comments: 1998-04-30.

34A/802/NP

Proposal of the Secretariat: Draft amendment to IEC 60188: High pressure mercury vapour lamps
Deadline for comments and vote: 1998-04-30.

34A/803/NP

Proposal of the Secretariat: Amendment to IEC 60969: Self-ballasted lamps for general lighting services
- Performance requirements
Deadline for comments and vote: 1998-05-15.

34A/804/CD

Draft amendment 2 to IEC 61195: Double-capped fluorescent lamps - Safety specifications
Deadline for comments: 1998-05-15.

34D/494/NP

Proposal of the WG LUMEX: Draft IEC 60598 - Part 2: For lighting systems formed with a luminaire integrated in a lighting column fixed in the ground
Deadline for vote: 1998-04-15.

34D/496/NP

Proposal of WG LUMEX: Draft proposals to amend IEC 60598-1: Luminaires
Deadline for comments and vote: 1998-04-30.

34D/497/CD

Draft Amendment 1 to IEC 60598-2-4: Luminaires - Part 2-4: Particular requirements for portable general purpose luminaires
Deadline for comments: 1998-04-30.

34D/498/CD

Draft Amendment 1 to IEC 60598-2-23: Luminaires - Part 2-23: Particular requirements for extra-low voltage systems for filament lamps
Deadline for comments: 1998-05-15.

IEC/76/171/CDV

Technical Report Type 3: IEC 60825-9: Safety of laser products - Part 9: Compilation of maximum permissible exposure to incoherent optical radiation.
Deadline for comments and vote: 1998-07-15.

IEC/76/172/CDV

IEC 60825-6, Ed.1: Technical Report Type 2: Safety of laser products - Part 6: Safety of products with optical sources, exclusively used for visible information transmission to the human eye.
Deadline for comments and vote: 1998-07-31.

Persons interested in above items are requested to contact their IEC National Committee for further details.

ISO 9416 1998-02-15:

Paper-Determination of light scattering and absorption coefficient using Kubelka-Munk theory.

This standard specifies a method - together with ISO 2741 and ISO 536 - for the calculation of light scattering and absorption factors of white paper.

The principle and the usable apparatus is detailed or referenced. The fluorescent effect is dealt with.

It gives thorough guidelines for the preparation of the samples, the measurement procedure and the way of calculation. The main items of a test report are included.

From the Lighting Journals

Color Research and Application

Volume 22, Number 4, 1997

Brightness induction in a chromatic center - achromatic surround configuration

M. J. Luque, P. Capilla, A. Felipe, J.M. Artigas

Field trials of a nonlinear color-appearance model

Y. Nayatani, H. Sobagaki, K. Hashimoto,
T. Yano

A simple estimation method for effective adaptation coefficient

Y. Nayatani

Preference for Japanese complexion color under illumination

T. Yano, K. Hashimoto

Rapid absolute diffuse spectral reflectance factor measurements using a silicon-photodiode array
C.-S. Kim, H.-J. Kong

Error propagation analysis in color measurement and imaging
P. D. Burns, R. S. Berns

ASTM standards on color and appearance measurement
H. K. Hammond, III

Volume 22, Number 5, October 1997

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For your Diary

| Date | Title of Meeting | Organizer | Place of Meeting |
|--------------------|--|---|------------------------------------|
| 1998 | | | |
| April 1 - 3 | EP98, Int.Conf.on Electr.Publ., Doc. Manipulation, Typography | R.Ingold, Univ.de Fribourg, Chemin du Musée 3, CH-1700 Fribourg | Saint Malo, France |
| April 5 - 8 | National Lighting Conference | CIBSE Lighting Div., 222 Balham High Rd., London SW12 9BS | Lancaster, UK |
| May 8 | CIE Division 3 Meeting | CIE Division 3 | Ottawa, Ontario, Canada |
| May 9 - 10 | CIE Symposium on Lighting Quality | CIE - NRC CNRC | Ottawa, Ontario, Canada |
| May 10 - 13 | Metrology Workshop | Ms.Chilcott,tel.:+27 12 349 1290 | South Africa |
| May 11 - 13 | Daylighting '98 - Techn. for Energy Efficiency in Buildings | Nat.Res.Canada D.Tolot, 580 Booth Street Ottawa ON K1A 0E4 | Ottawa, Ontario, Canada |
| May 14 | Lamps and Lighting | Slov.dr.razsvetljava, fax+386 62227692, light.eng@uni-mb.si | Maribor, Slovenia |
| May 17 - 20 | PIC Conference (Image Proc., Image Quality, Imag.Sys.) | IS&T | Portland, Oregon, USA |
| May 18 - 19 | CIE Division 2 and TC Meetings | CIE Division 2 | Boulder, Colorado, USA |
| May 19 - 20 | Stadt- u. Außenbeleuchtung | LITG, Bezirksgruppe Dresden, fax: 0351 463 7049 | Dresden, Germany |

| Date | Title of Meeting | Organizer | Place of Meeting |
|-------------------|---|---|----------------------------------|
| May 20 - 21 | CORM '98 Annual Conference | W.L.Weber, fax: 914 561 8140, e-mail: WillLWeber@aol.com | Boulder, Colorado, USA |
| May 26 - 29 | ICISH '98: 3rd Intern.Conf. on Imaging Science and Hardcopy | Reprographic Scientists and Engineers Society, China | Chong-qing, China |
| May 27 - 29 | Lightfair International 1998 | AMC Tradeshow, 240 Peachtree St. NW, Atlanta Ga 30303, USA | Las Vegas, NV, USA |
| June 1 - 3 | Light '98 | Czech Lighting Soc. fax:0042069 211988 | Ostrava, Czech Republic |
| June 1 - 7 | CIE Division 5 Meeting | CIE Division 5 | Barcelona, Spain |
| June 3 - 5 | Svetlo '98 | ZSVTS, Skultetyho 1 83227 Bratislava, Slovakia fax 542 44 91 | Bratislava, Slovakia |
| June 8 - 11 | Int. Con. on Applied Optical Metrology | P.Rastogi fax: 4121-693 4748 rastogi@ imac.dgc.epfl.ch | Balatonfüred, Hungary |
| June 22 - 26 | Laser Optics '98 | LO'98, Inst. Laser Physics St. Petersburg, 199034 fax: (812)218-5891 | St. Petersburg, Russia |
| June 28 - July 2 | Optical spectrometry: Applications and instrumentation | CORM, Dr. Barnard The Pines, Larch Av., Ascot SL5 0AW, UK | Surrey, UK |
| June 29 - July 3 | XVI Intern. Conf. on Coherent and Nonlinear Optics ICONO '98 | Russ. Ac. of Sciences, N. Koroteev, Moscow fax: (7095) 939-3113, | Moscow, Russia |
| July 19 - 24 | Int. Symp. on Optical Science, Eng. and Instrumentation | SPIE sd98@spie.org | San Diego, CA, USA |
| July 27 - 30 | ICAPT'98 Int. Conf. on Applications of Photonic Techn. | G. Lampropoulos fax: 416/923 9129 aug_sig@ netcom.ca | Ottawa, Canada |
| July 29 - 31 | 1998 Annual Conf. of the IES of Japan | IEI-J, fax: +813 5294 0102 ieijsomu@saturn.netspace.or.jp | Sapporo, Japan |
| Aug. 30 - Sep. 3 | LS-8, Science and Technology of Light Sources | G. Babucke, Robert-Blum-Str. 8-10 D-17489 Greifswald | Greifswald, Germany |
| Aug. 31 | CIE Division 6 Meeting | CIE Division 6 | Rockville, MD, USA |
| Sep. 1 - 3 | Measurements of Optical Radiation Hazards | NIST, CIE Div.6, USACHPPM, ICNIRP dsliney@aeha1.apgea.army.mil | Gaithersburg, MD, USA |
| Sep. 7 - 11 | Biomedical Optics in Europe VI | EOS, BP 147 F-91403 Orsay Cedex | Edinburgh, UK |
| Sep. 7 - 11 | Intern. Congress on Imaging Science | J. De Roeck, Agfa- Gevaert NV, fax: +32 3 444 7697 | Antwerp, Belgium |
| Sep. 10 - 12 | Intern. Symposium: Colour and colour measurement | Univ. Maribor fax: +386 62 220 7990 | Maribor, Slovenia |

| Date | Title of Meeting | Organizer | Place of Meeting |
|-------------------------|--|--|---------------------------|
| Sep. 15 - 19 | Intern.Congress on High-Speed Photography and Photonics | ICHSP 98 Ozernaya 46, VNIIOFI, 119361 Moscow, fax:(7095)4373147 | Moscow, Russia |
| Sep. 16 - 18 | Licht 98 | LTG, Postfach 148 A-2340 Mödling | Bregenz, Austria |
| Sep. 29 - Oct. 1 | CIE Division 1 Meeting | CIE Division 1 | Baltimore, MD, USA |
| Oct. 2 - 4 | ISCC Annual Meeting | ISCC, 11491 Sunset Hills Rd., Reston VA 20190 iscc@compuserve.com | Baltimore, MD, USA |
| Oct. 5 - 9 | Europ. Symp.Imaging & Information Serv. | EOS, BP 147, F-91403 Orsay Cedex | Lyon, France |
| Oct. 8 - 11 | Colour between Art and Science - Oslo Intern. Colour Conf. | NCAD Inst.of Colour Ullevsveien 5, N-0165 Oslo | Oslo, Norway |
| Nov. 1 - 3 | Biologic effects of light | Light Symp.Found., POB 35 CH-4125 Riehen/Basel | Basel, Switzerland |
| Nov. 17 - 20 | IS&T/SID 6th Color Imaging Conference | IS&T | Scottsdale, Arizona, USA |
| Dec. 14 - 18 | Int. Conf. on Optics and Optoelectronics | A.K.Gupta fax:91-135 687161, 687128, root@drirde.ren.nic.in | Dehra Dun, India |
| 1999 | | | |
| Aug. 2 - 6 | ICO XVIII - Optics for the next millenium | ICO, SPIE, POB 10, Bellingham WA 98227-0010, USA | San Francisco, CA, USA |
| Oct. 6 - 8 | Balkan Light-99, 1st Balkan Lighting Conference & Exhibition | Bulgarian NC-CIE fax: +3592 654883, e-mail: denima@omega.bg | Varna, Bulgaria |

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