



MINUTES OF THE 2nd MEETING (McFadden TERM)

DIVISION 1: VISION AND COLOUR

Monday 16 May 2005

Leon, Spain

COMMISSION INTERNATIONALE DE L'ECLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
INTERNATIONALE BELEUCHTUNGSKOMMISSION

Web site: <http://nml.csir.co.za/~cie1>

ATTENDANCE*

Officers

S McFadden	Director	Canada
F Viénot	Associate Director	France
M Pointer	Associate Director	Great Britain
E Carter	Editor	United States of America
Y Nakano	Secretary	Japan

Country representatives

	P McGinley		Australia
*	S McFadden		Canada
	M Vik		Czech Republic
	L Halonen	(nominated representative)	Finland
*	F Viénot	(nominated representative)	France
	K Richter	(nominated representative)	Germany
*	M Pointer		Great Britain
	J Schanda	(nominated representative)	Hungary
	O Da Pos		Italy
*	Y Nakano		Japan
	C Kim		Korea
	A Chalmers		New Zealand
	M Gunde		Slovenia
	F Hengstberger	(nominated representative)	South Africa
	J Campos		Spain
	G Derefeldt		Sweden
	R Unver		Turkey
	P Alessi		United States of America

Countries represented at the meeting: 18

Technical Committee Chairpersons

*	Y Nakano	TC1-30, TC1-46	Japan
*	F Viénot	TC1-36	France
	K Sagawa	TC1-37, TC1-54	Japan
	M Ayama	TC1-42	Japan
*	J Schanda	TC1-48, TC1-59	Hungary
	R Luo	TC1-52	Great Britain
	M Brill	TC1-56	United States of America
	A Robertson	TC1-57	Canada
*	L Halonen	TC1-58	Finland
	M Uriegas	TC1-60	Spain

* Asterisks before names represent duplication elsewhere in the list.

*	P Bodrogi	TC1-62	Hungary
*	K Richter	TC1-63	Germany
*	S McFadden	TC1-64	Canada
*	M Pointer	TC1-65	Great Britain

Reporters

*	G Derefeldt	R1-11	Sweden
	H Yaguchi	R1-19	Japan
*	R Luo	R1-33	Great Britain
*	J Schanda	R1-34	Hungary
	N Itoh	R1-37	Japan

Guests

Some guests are members of TCs

R Bergman		United States of America
W Bommel	CIE President	The Netherland
J Caivano		Argentina
A Corrons		Spain
P Csuti		Hungary
D Crawford		United States of America
M Eloholma	TC Member	Finland
F Fermi		Italy
S Kanaya		Japan
L Leetzor		United States of America
T Newman	D8 Director	United States of America
J Makai	CIE CB	Austria
M Nicholson	Liaison	Great Britain
H Noguchi		Japan
C Oleari	TC Member	Italy
E Radkov		United States of America
N Sandor		Hungary
H Ujike	New TC chair	Japan
J Zwinkels	Liaison	Canada

Apologies

(country representatives, TC chairs, or reporters indicated)

Pieter Walraven (TC1-41), K Wenzel (Hungary), R Séve (France), Alan Robertson (TC1-57), J van Kemenade (The Netherlands), Natasha van Tonder (South Africa), Miyoshi Ayama (TC1-42).

Total attendance: 44

1. WELCOME

The Division Director, Mrs. McFadden, welcomed all present.

2. ANNOUNCEMENTS

Some changes of the meeting schedule were announced.

Dr. Schanda announced that the CIE board was planning to publish a book called “CIE colorimetry 1931-2006” to commemorate the anniversary of 75th years of colorimetry, and requested us to help shaping the chapters and to volunteer to write a chapter.

3. ATTENDANCE

18 countries were officially represented.

4. MEMBERSHIP

The CIE National Committees of Argentina and Iceland had to be expelled for not paying their dues. BLV-LCC of Tunisia was appointed as supportive member.

5. DISCUSSION AND CONFIRMATION OF AGENDA

The agenda was confirmed as in Appendix I.

6. APPROVAL OF MINUTES OF THE SEVENTH MEETING OF THE SAGAWA TERM

The minutes of the 2004 meeting held in Tokyo, Japan, were approved. They appear on the Division 1 web site.

7. MATTERS ARISING FROM THESE MINUTES

None.

8. DIRECTOR'S REPORT, INCLUDING REPORT FROM BOARD OF ADMINISTRATION (Mrs. McFadden)

Division 1 Specific

The following Division 1 reports and standards were published during the past year:

CIE 15:2004, Colorimetry 3rd Edition.

CIE 160:2004, A review of chromatic adaptation transforms

CIE DS 012.3/E:2004, Standard Method of Assessing the Spectral Quality of Daylight Simulators for Visual Appraisal and Measurement of Colour

CIE x026:2004, Proceedings of the CIE Symposium '04 on LED Light Sources: Physical Measurement and Visual and Photobiological Assessment

CIE 165:2005, CIE 10 Degree Photopic Photometric Observer

In addition, the technical report from TC1-38 has been approved by the Board of Administration and Division 1.

Board of Administration

Approval of one new TC and three Reporterships.

TC1-66: Indoor daylight illuminant (Chair: János Schanda HU)

R1-35: Irregularities in $\bar{y}_{10}(\lambda)$ (V) (Reporter: Pieter Walraven, NL)

R1-36: Action Spectra for Glare (V) (Reporter: Judith Fekete, HU)

R1-37: Definition of the Visual Field for Conspicuity (V) (Reporter: Nana Itoh, JP)

It also approved the changes in the Terms of Reference for TC1-58, Mesopic Photometry.

The decision to introduce web-based sales moved forward with a recommendation to negotiate an agreement with TechStreet (see details in Appendix II).

The BA is looking for nominations for the three distinguished service awards that were approved at the last Quadrennial. In particular, it has asked the Directors of Division 1 and 2 for recommendations for the Judd award which will be presented for Distinguished Service in fundamental research.

Here, some suggestion arose from AIC president that the name of the award should be changed

because the award of the same name exist in the AIC. The meeting approved to suggest that the name of the award should be changed to “CIE W. D. Wright award.” Recent information shows that the name of the award had been changed to “CIE G. Wyszecki award.”

About the activity of members in TC (see details in Appendix II).

The date for the 2007 Quadrennial will now be held from 4-11 July.

About the current Division structure (see details in Appendix II).

9. REPORTS FROM EDITOR AND SECRETARY

Dr. Carter reported that she had edited several reports from TC1-38, TC1-59, TC1-57, TC1-36 and R1-11.

Dr. Nakano reported that the 2005 Activity Report and the minutes of the last meeting in Tokyo had been uploaded onto Division 1 website. He also requested to let him know if there was any change of address for the country members, TC chairmen and Reporters.

10. VISION

(Associate Director: Dr. Viénot)

Dr. Viénot chaired this session.

TC1-30: Luminous Efficiency Functions (Y Nakano)

Dr. Nakano reported that issues on interpolation problem had been solved by TC1-38, and the notation of maximum luminous efficacy had been agreed on with TC1-59. According to these results, the final draft should be prepared as soon as possible.

TC1-36: Fundamental Chromaticity Diagram with Physiologically Significant Axes (F Viénot)

Dr. Viénot reported that the technical report of Part I had been sent to CB, and was now on the process of Division ballot. Part II still has fundamental questions on the chromaticity diagram. Detailed tutorial had been presented on these issues.

TC1-37: Supplementary Systems of Photometry (K Sagawa)

Dr. Sagawa reported that the TC was now trying to establish a supplementary photometric system based on the results of TC1-21 and the system would be presented at the CIE Expert Symposium entitled “Vision and Lighting in Mesopic Conditions '05” that would follow the Division meeting. The system is based on brightness sensation, and is different from the similar approach by TC1-58 that is based on several kinds of visual performances such as acuity, reaction time etc.

TC1-41: Extension of $V_m(\lambda)$ beyond 830 nm (P Walraven)

Dr. Viénot reported that the terms of reference had been changed as shown in the 2005 Activity Report, and that the draft report of this TC was close to being completed, but awaited the approval of chapter 6 of the report of TC 1-36 where the $V(\lambda)$ revised function was described

TC1-42: Colour Appearance in Peripheral Vision (M Ayama)

Dr. Viénot read the report from the chair, Dr. Ayama, as follows

The committee had a meeting at the CIE Expert Symposium on June 11, 2004, held in Tokyo, Japan. In the meeting, the following issues were discussed.

Ayama presented the proposal for the contents of Technical Report. The contents proposed were

basically approved by the members attended the TC meeting and the other attendees, while details in each chapter were precisely discussed. Main issues agreed on the meeting are as follows;

- 1) Colour zone map from Ayama lab should be presented, and then intra- and inter-laboratory variability, especially along the horizontal meridian, should be added,
- 2) Figures representing hue shifts with eccentricity should be included,
- 3) All of the references in the proposal should be listed at least.

It would be desired that the first draft is sent to the members from Ayama by the end of December, 2004. Unfortunately, the chairperson has not progressed with making a draft.

Dead line would be extended by the end of September, 2005.

TC1-46: Concept and Application of Equivalent Luminance (Y Nakano)

Dr. Nakano reported that there were some problems about communication among the TC members, and about the way how to describe the concept of equivalent luminance without misunderstanding. He and associate Director suggested that the TC should be change into Reportership, and the report should be written all by himself. The meeting approved the change of this TC to Reportership unanimously.

TC1-54: Age-Related Change of Visual Responses (K Sagawa)

Dr. Sagawa reported that a new TC member, D Kline (CA), was joined. He showed age related changes on three kinds of spectral sensitivity functions based on luminous efficiency, visual acuity and contrast sensitivity. Age related changes in short wavelength region can be attributed to the yellowing of lens pigment and will be comparable to the results in TC1-36. He also reported that he is now trying to establish a guideline of accessibility for elderly and disabled people as a task of CIE vice presidency, and the data from this TC will be utilized for this guideline.

TC1-58: Visual Performance in the Mesopic Range (L Halonen)

Dr. Viénot announced that this TC would meet tomorrow, and that the details would be discussed there. In the TC meeting, there were active discussions on how adaptation level would be determined in the complex environment at mesopic levels.

TC1-59: Standard Photometric 10° Observer (J Schanda)

Because this TC has published the technical report as shown in the Director's report, it was automatically closed at this meeting. We thanked Dr. Schanda for his excellent work as the chairman of this TC.

TC1-60: Contrast Sensitivity Function (CSF) for Detection and Discrimination (E Martinez-Uriegas)

Dr. Viénot announced that this TC would meet tomorrow, and that the details would be discussed there.

In the TC meeting, a formula of contrast sensitivity function that included the effects of luminance level and stimulus size was introduced, and there were active discussions on this function.

R1-16: Visual Adaptation to Complex Luminance Distribution (H Shinoda)

Dr. Viénot reported that no progress was achieved since the report was published as CIE collection in 1999. We decided to close this Reportership because no further progress would be expected. This topic is very important, and Division 8 is also dealing with similar topic, but we close this Reportership anyway, and wait for a new suggestion in the case the further study on this topic is necessary. The Division approved to close this Reportership unanimously.

R1-19: Specification on Individual Variation in Heterochromatic Matching (H Yaguchi)

Dr. Yaguchi reported that he has surveyed papers on heterochromatic brightness matching in terms of individual difference and examined the possibility to develop a simple test of individual characteristics for heterochromatic brightness matching. He completed the report in Japanese, and

will complete the English version and send it to the Division.

R1-23: Guidelines on Planning a Mesopic Photometry Investigation (P Trezona)

Dr. Viénot reported that the report prepared by Dr. Trezona has been reviewed by two referees. She has forwarded the comments from the referees to the reporter, but the reporter received the reviews only in April and will study them. We are expecting her revised report.

R1-35 Irregularities in $\bar{y}_{10}(\lambda)$ (P Walraven)

Dr. Viénot read the report from the Report as follows.

This reportship was formed at the Tokyo meeting of Division 1 in June 2004. This work was supposed to be in cooperation with Dr Don MacLeod. I was unable to get in touch with him. I will do it alone, if Division approves.

R1-36 Action Spectra for Discomfort Glare (J Fekete)

Dr. Viénot reported that this reportship was formed at the Tokyo meeting of Division 1 in June 2004, and the reporter was now collecting literature and the report on this survey will hopefully appear at the next meeting.

R1-37 Definition of the Visual Field for Conspicuity (N Itoh)

Dr. Itoh presented a comprehensive report of her survey on functional visual field. She will prepare a written report from now on.

11. COLOUR

(Associate Director: Dr. Pointer)

Dr. Pointer chaired this session.

TC1-27: Specification of Colour Appearance for Reflective Media and Self-Luminous Display Comparison (P J Alessi)

Ms. Alessi reported that her intension was to complete the report by 2006 and to close this TC in 2007 at Beijing.

TC1-38: Compatibility of Tabular Data for Computational Purposes (M Pointer)

Dr. Pointer reported that he circulated draft 9 of the technical report to the members and agreed on our recommendation. The report went out NC ballot last year and received several comments, and he is now looking at how to address these comments. Final issue is to make sure what is in this report isn't a conflict with document 15.

TC1-44: Practical Daylight Sources for Colorimetry (R Hirschler)

Dr. Pointer reported that chairman moved to Hungary and summarized the report from the chairman. A lot of work has been done on colour matching booth, and recommendation for practical method of simulating daylight will be made based on these works.

TC1-48: Revision of CIE Document 15.2 Colorimetry (J Schanda)

Dr. Pointer reported that the document has been published in November last year and proposed to close this TC. He thanked Dr. Schanda for his hard work. Closing of this TC was automatically approved.

TC1-52: Chromatic Adaptation Transform (M R Luo)

Dr. Pointer reported that the report has been published. It successfully reviewed number of chromatic adaptation transforms and showed many of them work equally well. He proposed to close this TC because the work has been done. He thanked Dr. Luo for his contribution. Closing of this TC was automatically approved.

TC1-53: A Standard Method of Assessing the Quality of Daylight Simulators (M Pointer)

Dr. Pointer reported that this standard has been published and proposed to close this TC. He thanked Dr. Zwinkel for her help to make sure the terminology in this document agreed with that used in Division 2. Closing of this TC was automatically approved.

TC1-55: Uniform Colour Space for Industrial Colour Difference Evaluation (J Nobbs)

Dr. Pointer reported that this TC met in San Diego but the chairman was resigning. He recommended Dr. Melgosa (SP) as a new chairman. It was pointed out that we didn't have member list for this TC and anybody who knows the information was asked to let us know.

TC1-56: Improved Colour Matching Functions (M Brill)

Dr. Brill reported that there were relevant researches recently conducted by three groups. The one was Dr. Luo's group (GB), the second was Dr. Oleari's group (IT) and the third was Dr. Nakano's group (JP). These groups measured color matching functions under 3 cd/m², 30 cd/m² and 300 cd/m² of luminance level, respectively. He is planning to conduct the experiment to test the transformability of primaries and Grassmann's law using one observer.

TC1-57: Standards in Colorimetry (A Robertson)

Dr. Pointer reported that this TC had 19 members and 10 liaisons. This TC is now waiting for the publication of document 15 because the equations for CIELAB have changed. Draft standard for CIELAB is now out for comments within ISO. Draft documents for CIELAB colour space, calculation of tristimulus values and colour difference evaluation will follow.

TC1-61: Categorical Colour Identification (T Ishida)

Dr. Pointer reported that this TC made no progress last year.

TC1-62 Colour rendering of LED light sources: (P Bodrogi)

Dr. Bodrogi reported that this TC would meet tomorrow, and the following items would be discussed there.

1. Visual experiments and their results.
2. Applicability of the CIE colour rendering index
3. Recommendations of the technical committee

TC1-63 Validity of the range of CIEDE2000: (K Richter)

Dr. Richter reported that there was a meeting of 4 members (Richter, Gegenfurtner, Walraven, Oleari) in Nov. 2003 to exchange the ideas how to deal with the topic. CIEDE2000 is mainly based on visual data between 1 and 5 CIELAB. Therefore pure threshold data and large colour differences seem to be not included. Threshold data to be used: The data of Gegenfurtner, Holtsmark, Yaguchi and others will be used. Large colour difference data: The data of the CIELAB system (Munsell of real samples only), OSA samples, NCS samples, of Luo and others will be used. The chair provided a comprehensive report as shown in the Activity Report 2004, and there was nothing further to report here.

TC1-64 Terminology for vision, colour and appearance: (S McFadden)

Mrs. McFadden reported that the harmonization committee would meet this afternoon to work on rationalizing some of the terms. Present status of the ILV is that all of the Divisions agreed to work on the revision together. The English version of the ILV will be completed first and it will be compiled into French and German afterward.

TC1-65 Visual appearance measurement: (M Pointer)

Dr. Pointer reported that there were now 24 members including full members and corresponding members. He circulated a draft of the technical report on January, and received the responses from 14 people. He will work on the second draft to resolve these comments by the end of this year. This TC will meet this afternoon. He also announced that the CIE Expert Symposium on Visual Appearance would be held in October 2006 in Paris, France.

TC1-66 Indoor daylight illuminant: (J Schanda)

Dr. Schanda announced that the TC would meet tomorrow and invited those who interested to join the TC.

R1-11 Cognitive Aspects of Colour: (G Derefeldt)

Dr. Pointer reported that the reporter produced a report and it would be published as a CIE collection. This reportership will be closed at the next meeting. He thanked Dr. Derefeldt for her interesting report.

R1-32 Emotional aspects of colour and light: (G Derefeldt)

Dr. Derefeldt showed her ideas on the contents of the report.

R1-33 Colour difference evaluation: (R Luo)

Dr. Luo reported that he was surveying relevant articles. There were several papers presented at the AIC05 meeting in Granada, and they showed that CIEDE2000 gave similar performance as CMC, CIE94 in predicting experimental data but outperformed CIELAB.

12. DISCUSSION ON NEW WORK ITEM PROPOSALS

Effects of dynamic and stereo images on human health

Terms of reference:

To write technical report on the physiological and psychophysical effects of dynamic and stereo visual images in terms of photosensitive seizures, visually induced motion sickness and eyestrain

Chairman: Hiroyasu Ujike JP

Members: J Bos NL, G F A Harding GB, P A Howarth GB, T Kiryu JP, K Sagawa JP, K Ukai JP, A Wilkins GB, M Yoshizawa JP

The Division unanimously approved the establishment of this TC.

Committee number: TC1-67 (Vision section)

Effect of stimulus size on colour appearance

Terms of reference:

To compare the appearance of small(2°) and large ($>20^\circ$) uniform stimuli on a neutral background.

Chairman: Peter Bodrogi HU

Members: C S Kim KR, K F Anter SE, G Derefeldt SE, I Chen TW, O da Pos IT, R Luo GB, M Nicholson GB, R Ünver TR

The Division unanimously approved the establishment of this Reportership.

Committee number: TC1-68 (Colour section)

13. LIAISON

AIC

Ms. Alessi reported the scheduled dates and places of the coming AIC meetings

ISO/TC6/W3: Paper, Board and Pulp - Optical Properties

Dr. Zwinkels reported about the meeting held in Stockholm Sweden.

ISO/TC38/SC1: Textiles: Colour Fastness & Measurement

Dr. Luo reported the status.

ISO/TC42: Photography

Dr. Pointer reported that he resigned from this TC and would resign from the liaison.

ISO/TC130: Graphic Technology

Dr. Johnson resigned.

14. REVIEW OLD PUBLICATIONS

Division reviewed old publications and discussed how to update the old materials (see Appendix III).

15. PLAN FOR NEW EXECUTIVE IN 2007

Director asked for nominations of new executive.

16. NEXT MEETING

For the next meeting in 2006, ISCC and Canadian National Committee hold a Division meeting in Ottawa in 16-17 May 2006 in conjunction with the annual meeting of ISCC and the Symposium on 75th anniversary of CIE standard observer.

The meeting in 2007 will be held in Beijing.

17. ANY OTHER BUSINESS

None.

CLOSE

After thanking all members and guests for attending, Mrs. McFadden formally closed the meeting.

CIE DIVISION 1 "VISION AND COLOUR"
Second Meeting of the McFadden Term
Monday 16 May 2005

AGENDA

Monday 16 May

9:00 - 9:45 **General Opening Session**

1. Opening and welcome by Director, Ms. Sharon McFadden
2. Announcements
3. Attendance
4. Membership
5. Discussion and confirmation of agenda
6. Approval of the minutes of the 1st meeting of the McFadden term
7. Matters arising from these minutes
8. Director's report, including report from CIE Board of Administration
9. Reports from Editor and Secretary, E. Carter and Y. Nakano

9:45 - 10:00 Break

10:00 - 17:20 **CIE Division 1 Business Session**

10:00 - 12:00 10. Report of Vision Section and Discussion
Dr. Françoise Viénot

12:00 - 13:30 Lunch

13:30 - 15:30 11. Report of Color Section and Discussion
Dr. Mike Pointer

15:30 - 15:45 Break

15:45 - 16:30 12. Discussion on new work item proposals
- new TCs and Reporters

16:30 - 16:40 13. Liaison

16:40 - 16:50 14. Review old publications

16:50 - 17:00 15. Plan for new executive in 2007

17:00 - 17:10 16. Next meeting

17:10 - 17:20 17. Any other business

17:20 Close

Director's Report for 2005

The following Division 1 reports and standards were published during the past year:

CIE 15:2004, Colorimetry 3rd Edition.

CIE 160:2004, A review of chromatic adaptation transforms

CIE DS 012.3/E:2004, Standard Method of Assessing the Spectral Quality of Daylight Simulators for Visual Appraisal and Measurement of Colour

CIE x026:2004, Proceedings of the CIE Symposium '04 on LED Light Sources: Physical Measurement and Visual and Photobiological Assessment

CIE 165:2005, CIE 10 Degree Photopic Photometric Observer

In addition, the technical report from TC1-38 has been approved by the Board of Administration and Division 1.

Report from the Board of Administration:

Since the last Division 1 meeting, the Board of Administration has met twice – September 04 and last Friday, May 13th. At the 2004 meeting, it approved the decisions made at the last Division meeting in regards to the formation of one new TC and three Reporterships.

TC1-66: Indoor daylight illuminant (Chair: János Schanda HU)

R1-35: Irregularities in ybar10(L) (V) (Reporter: Pieter Walraven, NL) R1-36: Action Spectra for Glare (V) (Reporter: Judith Fekete, HU)

R1-37: Definition of the Visual Field for Conspicuity (V) (Reporter: Nana Itoh, JP)

It also approved the changes in the Terms of Reference for TC1-58, Mesopic Photometry.

The two proposals for Symposia put forward by Division 1 were received positively.

The decision to introduce web-based sales moved forward with a recommendation to negotiate an agreement with TechStreet. That agreement is now in place and the ability to purchase technical reports through a web shop should be available within a few weeks. In conjunction with this, a new look to the CIE website will be introduced in the next few months. Once this is in place, the CB will look into bringing the websites of the Divisions into conformity with the look and feel of the central website.

The BA is looking for nominations for the three distinguished service awards that were approved at the last Quadrennial. In particular, it has asked the Directors of Division 1 and 2 for recommendations for the Judd award which will be presented for Distinguished Service in fundamental research.

It was recommended that when listing the members of a TC in a Technical report, the Chair distinguish between those that have actively contributed and those that held primarily observer status. BA also reiterated the need to make certain that new TCs are put in place have broad relevance and broad support. We should avoid proposing TCs that reflect narrow interest of one or two members or for which we do not have a depth of technical expertise available. More generally the number of TCs should not exceed the capabilities of the Division.

The date for the 2007 Quadrennial that was suggested at the last Quadrennial has been revised because the original date conflicted with the examination period for Chinese Universities. The 2007 Quadrennial will now be held from 4-11 July.

It is over twenty years since the current Division structure was put in place. It was felt that it was probably a good time to revisit the current structure. This recommendation was based on two concerns. Some of the topics that need to be addressed cut across Divisions and the current structure seems to inhibit collaboration across Divisions. The current Divisions may not be consistent with the

requirements of the light and lighting community. We may need to attract different types of experts to address different concerns. There is less support for research and development within industry and government. We need to make more efficient use of limited resources.

No.	Title	Year	Status
41	Light as a true visual quantity: Principles of measurement	1978	
19.21	An analytic model for describing the influence of lighting parameters upon visual performance, 2 nd ed., Vol. 1: Technical foundations	1981	
19.22	An analytic model for describing the influence of lighting parameters upon visual performance, 2 nd ed., Vol. 2: Summary and application guidelines	1981	
60	Vision and the visual display unit work station	1984	Outdated – but is it addressed by other standards organizations now
D001	Disc version of CIE photometric and colorimetric data (Publ. 18.2, 86, S001 and S002 tables)	1988	
75	Spectral luminous efficiency functions based upon brightness matching for monochromatic point sources, 2 degree and 10 degree fields	1988	
78	Brightness–luminance relations: Classified bibliography	1988	??
80	Special metamerism index: Change in observer	1989	
81	Mesopic photometry: History, special problems and practical solutions	1989	TC1-58
86	CIE 1988 2 degree spectral luminous efficiency function for photopic vision	1990	
87	Colorimetry of self–luminous displays –	1990	Still D1?

	A bibliography		
10527E	International standard ISO/CIE 10527: CIE standard colorimetric observers	1991	D2 updating?
D002	CIE colorimetry and colour rendering tables	1991	
95	Contrast and visibility	1992	??
101	Parametric effects in colour-difference evaluation	1993	??
103/1	Colour appearance analysis	1993	informal report
D005	A method for assessing the quality of D65 daylight simulators for colorimetry (based on Publ. 51)	1994	
D007	A method of predicting corresponding colours under different chromatic and illuminance adaptations (Computer program to Publ. CIE 109)	1994	
109	A method of predicting corresponding colours under different chromatic and illuminance adaptations	1994	Updated – Publ 160?
D008	Computer program to calculate CRIs (to Publ. CIE 13.3)	1995	TC1-62
13.3	Method of measuring and specifying colour rendering properties of light sources	1995	TC1-62?
116	Industrial colour-difference evaluation	1995	Updated –Publ 142? TC1-55?
118	CIE collection in colour vision	1995	Informal reports
123	Low Vision	1997	??

10526E	International standard ISO/CIE 10526: CIE standard colorimetric illuminants	1999	D2 updating?
51.2	A method for assessing the quality of daylight simulators for colorimetry (with supplement 1-1999)	1999	Now S 013
135	CIE Collection in vision and colour and in physical measurement of light and radiation, 1999	1999	OK
141	Testing of supplementary systems of photometry	2001	OK
142	Improvement to industrial colour difference evaluation	2001	OK
145	The correlation of models for vision and visual performance	2002	OK
146	CIE equations for disability glare	2002	OK
S 013	Standard method of assessing the spectral quality of daylight simulators for visual appraisal and measurement of colour	2004	OK
15.3	Colorimetry, 3rd ed.	2004	OK
160	A review of chromatic adaptation transforms	2004	OK