

CIE Division 3 Report Interior Environment and Lighting Design

Craig Bernecker, Division 3 U.S Representative
Naomi Miller, Division 3 U.S. Alternate

CORM/CIE-USNC Conference 2024





International Commission on Illumination
Commission Internationale de l'Eclairage
Internationale Beleuchtungskommission

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DIVISION 3: INTERIOR ENVIRONMENT AND LIGHTING DESIGN

Welcome to the homepage of CIE Division 3, one of the six Technical Divisions of the International Commission on Illumination (CIE).

Anybody interested to contribute to and participate in the technical work of the Division, which is carried out through its Technical Committees, is welcome to contact either the Division Secretary, the Technical Committee chairperson or your country's National Committee of CIE for further information. Attendance at Division meetings is also open to anybody interested in this field.

Terms of Reference

Division 3 is concerned with factors which influence the satisfaction of the occupants of a building with their environment, including the effects of both daylighting and electric lighting.

Its objectives are to study and evaluate those factors to provide guidance on relevant design criteria, to study design techniques (including relevant calculations) for the interior lighting of buildings, to incorporate the findings and those of other CIE divisions into lighting guides for interiors in general or of particular types.

For questions and comments please contact the Division Secretary via [CIE Central Bureau](#).

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Division 3 Officers (2019 – 2023)

- Division Director: Peter Thorns
- Associate Division Director-Daylight : Martine Knoop
- Associate Director– Electric Lighting : Nozomu Yoshizawa
- Division Editor: Peter Thorns/Veronica Garcia-Hansen

Division 3 Officers (2023 – 2027)

- Division Director: Nozomu Yoshizawa
- Associate Division Director-Daylight : Adrie de Vries
- Associate Director– Electric Lighting : Anna Pellegrino
- Division Editor: Veronica Garcia-Hansen
- Division Secretary: Cláudia Naves David Amorim

Quadrennial Meeting

- Thursday 21st September 2023 – Ljubljana, Slovenia
9:00 – 12:00 CEST
- Craig Bernecker, Naomi Miller in attendance
- Led by Peter Thorns, Division Director

Plenary Meeting

- Wednesday, July 3, 2024 – WebEx
12:00 – 14:00 CEST
- Unable to attend
- Led by Nozomu Yoshizawa, Division Director



Division 3 Information

- Division 3 Website: <https://cie.co.at/technical-work/divisions/division3>
- Voting Division 3 Members (35): <https://cie.co.at/technical-work/divisions/division3/division-members>
- Division 3 Associates (83):
<https://collaborate.iec.ch/#/pages/workspaces/702232/team>
- Division 3 Technical Committees: <https://cie.co.at/technical-work/division3/technical-committees>

DIVISION 3 TECHNICAL COMMITTEES

3-54 Revision of CIE 16-1970: Daylight	Inactive; proposal to close
3-56 Assessment of Discomfort Glare from Daylight in Buildings	TR CIE252.2024
3-57 A Generic Discomfort Glare Sensation Model	Needs new chair
3-58 Visual Ergonomics and Digital Display Use	Close to report
3-59 The integration of daylight and electric lighting – photometric, colorimetric and radiometric requirements for the spectral design of indoor lighting	
3-60 Spectral Daylight Characteristics	
3-61 Review of regional daylight requirement to assess the feasibility of global harmonization	
3-62 Resilient Lighting	
3-63 Decision scheme to determine lighting requirements for indoor environments	
JTC 06 (CIE-ISO) Energy Performance of Lighting in Buildings	
JTC 08 (D1/D2/D3/D4/D6/D8) Terminology in light and lighting	
JTC 13 (D4/D3) Depreciation and Maintenance of Lighting Systems	Needs new co-chair
JTC 15 (CIE-ISO) Lighting of Indoor Workplaces	Close to report
JTC 18 (D3/D4) Lighting Education	New chair: Dr. Mandara Khanie

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DIVISION 3 REPORTERSHIPS

	TITLE	REPORTER
DR 3-33	Reportership on Guidelines for Post-Occupancy Evaluation of Lighting Installations	Veronica Garcia-Hansen
DR 3-36	Luminance Measurement for UGR	Gilles Vissenberg
DR 3-37	Use of VR for lighting research on indoor spaces	Kynthia Chamilothori

Closed with good results

Closed

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DIVISION 3 LIAISONS AND CORRESPONDENCES

	ORGANIZATION/SUBJECT	
L 3-02	ISO/TC 159/SC 4 Ergonomics of Human-System Interactions	Shahidul Islam
L 3-02	ISO/TC 159/SC 4 Ergonomics of Human-System Interactions	Diana Wernisch
L 3-03	ISO/TC159/SC 5 Ergonomics of the Physical Environment	
L 3-04	ISO/TC 163/SC 2 Thermal Performance and Energy Use in the Built Environment / Calculation Methods (Daylight)	
L 3-05	ISO/TC 205/WG 7 Indoor Visual Environment	Michail Papanikolaou
L 3-09	CEN/TC169/WG2 Lighting of Work Places	Tapio Kallasjoki
L 3-10	CEN/TC169/WG11 Daylight	Jan Wienold
L 3-11	CEN/TC169/WG3 Emergency Lighting in Buildings	Peter Thorns
L 3-12	CEN/TC169/WG9 Energy Performance of Buildings	Peter Thorns
L 3-13	ISO/TC163/WG4 Joint ISO/TC 163 - ISO/TC 205 WG: Energy performance of buildings using holistic approach	Laura Bellia
L 3-14	ISO/TC160/Glass in buildings	Peng Xue
DC 3-01	Illuminating Engineering Institute of Japan	Yoshiki Nakamura
DC 3-02	International Dark-Sky Association	Terry K McGowan

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DIVISION 3 PUBLICATIONS

[CIE TN 014:2023 Example Luminance Measurement Setup for UGR](#)

[CIE S 017/E:2020 ILV: International Lighting Vocabulary, 2nd Edition](#)

[CIE TN 011:2020 What to document and report in studies of ipRGC-influenced responses to light](#)

[CIE 232-2019\(DE\) Psychologische Blendung von Leuchten mit inhomogener Leuchtdichtestruktur der Lichtaustrittsfläche \(inkl. Korrektur 1\)](#)

[CIE 232:2019 Discomfort Caused by Glare from Luminaires with a Non-Uniform Source Luminance](#)

[ISO/CIE TS 22012:2019\(E\) Light and Lighting – Maintenance Factor Determination – Way of Working](#)

[ISO/CIE 20086:2019\(E\) Light and Lighting – Energy Performance of Lighting in Buildings](#)

[CIE 227:2017\(CN\) 适合老年人与视觉障碍人群的建筑光环境](#)

[CIE 227:2017 Lighting for Older People and People with Visual Impairment in Buildings](#)

[CIE 227:2017\(ES\) Iluminación para personas mayores y personas con baja visión](#)

[CIE TN 008:2017 Final Report CIE Stakeholder Workshop for Temporal Light Modulation Standards for Lighting Systems](#)

[CIE 222:2017 Decision Scheme for Lighting Controls in Non-Residential Buildings](#)

[CIE 218:2016 Research Roadmap for Healthful Interior Lighting Applications](#)

[CIE 215:2014 CIE Standard General Sky Guide](#)

[CIE 213:2014 Guide to Protocols for Describing Lighting](#)

[CIE 205:2013 Review of Lighting Quality Measures for Interior Lighting with LED Lighting Systems](#)

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CIE 173:2012 Tubular daylight guidance systems (including erratum 1)

CIE 190:2010 Calculation and Presentation of United Glare Rating Tables for Indoor Lighting Luminaires

CIE 171:2006 Test cases to assess the accuracy of lighting computer programs

CIE 97:2005 Guide on the maintenance of indoor electric lighting systems, 2nd ed.

CIE 164:2005 Hollow light guide technology and applications

CIE 161:2004 Lighting design method for obstructed interiors

CIE 157:2004 Control of damage to museum objects by optical radiation

ISO 15469:2004(E)/CIE S 011/E:2003 Spatial distribution of daylight - CIE Standard General Sky

CIE x024:2002 Proceedings of the ARUP/CIE Symposium on Visual Environment, April 24-25, 2002, London, United Kingdom

CIE 146/147:2002 CIE Collection on Glare 2002

ISO 8995-1:2002(E)/CIE S 008/E:2001 Lighting of Work Places - Part 1: Indoor

CIE 117-1995 Discomfort glare in interior lighting

CIE 110-1994 Spatial distribution of daylight - Luminance distributions of various reference skies

CIE 108-1994 Guide to recommended practice of daylight measurement + Disk D006

CIE 055-1983 Discomfort glare in the interior working environment

CIE 052-1982 Calculations for interior lighting: Applied method

CIE 019.22-1981 An analytic model for describing the influence of lighting parameters upon visual performance, 2nd ed., Vol.2.: Summary and application guidelines

CIE 019.21-1981 An analytic model for describing the influence of lighting parameters upon visual performance, 2nd ed., Vol.1.: Technical foundations

CIE 040-1978 Calculations for interior lighting: Basic method

CIE 016-1970 Daylight

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2023 Gold Pin Awardees announced

CIE Gold Pins are the highest honour awarded by the CIE. Established in 2007, the awards are granted...

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CIE Australia Lighting Research Conference

CIE Australia Lighting Research Conference 2024 will be held at the University of Melbourne, Carlton, on...

[Read more»](#)

CIE NC CA and NC US Biennial CORM Conference

The joint research conference organized by the Canadian and United States CIE National



Current Electric Lighting TC Highlights:

- **JJTC15 (D3/ ISO/TC 274/JWG 5): “Lighting for Workplaces”**

Chair: Etsuko Mochizuki (JP); U.S. Rep: Michael Jouaneh

To revise ISO/CIE 8995-1 in response to its systematic review. JTC15 members in each country are asked to investigate related standards and guidelines.

- Final ballot prepared; publication expected by end of 2024.

Current Electric Lighting TC Highlights:

- **3-62: RESILIENT LIGHTING**

Chair: Yuki AKIZUKI (JP)

The proposed terms of reference for this TC are: disaster's damage such as electric power outage during a large-scale disaster and accompanying evacuation behaviour and living conditions under the disaster, role of resilient lighting according to disaster's scales and duration, current standards and institutions of resilient lighting for disasters, current research, status and challenges of lighting planning for large-scale disaster and future research for resilient lighting.

- new TC on Resilient Lighting led a workshop in Ljubljana on Lighting for Preparedness. The origins of this work were with the NC-US and the American Lighting Association (the suggestion came from Terry McGowan).



Current Electric Lighting TC Highlights:

- **3-63: DECISION SCHEME TO DETERMINE LIGHTING REQUIREMENTS FOR INDOOR ENVIRONMENTS**

Chair: Anna Pellegrino (IT)

The TC will work on the definition of a decision scheme to determine lighting requirements for different visual tasks in indoor spaces, taking into account a wider set of variables with respect to those usually considered into national and international standards.

- Brand new and looking for members. This will be a guidance document to pair with the new indoor lighting standard.



Current Daylight TC Highlights:

- **3-61: REVIEW OF REGIONAL DAYLIGHT REQUIREMENT TO ASSESS THE FEASIBILITY OF GLOBAL HARMONIZATION**
- The aim of this TC is to review of regional daylight requirements and to assess the feasibility of global harmonization.
- They need input! **If you can provide information about US or Canadian requirements**, please send it to Craig to pass along.

New Electric Lighting Reporterships

- **REPORTERSHIP ON SPACIOUSNESS - Hiroyuki Miyake**
 - Expected within two years

- **REPORTERSHIP ON EMERGENCY LIGHTING – Michael Myer**
 - Exploring need for a new /revised standard
 - Expected within two years

Future Meetings

- **CIE Mid-Term Meeting**
Vienna
July 4-12, 2025
- **2026** – Virtual, Dates TBD
- **31st CIE Quadrennial**
Nanjing, China
July 9-17, 2027

Division 3 Needs?

YOU



CIE-USNC

Goals:

- Greater involvement by architectural lighting community
 - lighting designers/specifiers
 - lighting manufacturers
 - end users
- Greater representation on CIE Technical Committees
- Coordination with IES and IES committees



CIE-USNC Membership

- Individual Membership (required for participation in international activities -- Technical Committees, Executive Committee, etc.)
 - 66.7% discount on publications
 - participation in annual meeting
- Sponsoring Membership
 - 66.7% discount on publications
 - Individual memberships
 - Positions on USNC Executive Committee
 - input to U.S. representation on CIE Committees
 - participation in annual meeting

