Overview of Standards in Optics

The Structure of the Standards Organizations and
A Sampling of Current Activity
Allen Krisiloff

Executive Director, OEOSC
Secretary, ASC OP
Chairman, TAG to TC172
President, Triptar Lens Company, Inc.
Table of Contents

- Administration of Standards
- American Domestic Standards
- ISO Standards
- Responsibilities of the OEOSC
- Standards for Measuring Veiling Glare
Table of Contents

- Administration of Standards
- American Domestic Standards
- ISO Standards
- Responsibilities of the OEOSC
- Standards for Measuring Veiling Glare
Acronyms and Abbreviations

Secretariats (Administrators)

- **ANSI** – American National Standards Institute
  - Origins in 1916
  - Helped to create the ISO in 1946
- **OEOSC** – Optical and Electro-Optical Standards Council
  - Formed in 1996
  - National Association of Photographic Mfrs
ANSI/OEOSC ASC OP

ANSI

OEOSC

American Domestic Standards Development in Optics
ANSI/OEOSC TAG to ISO TC172

ISO

ANSI

OEOSC

American Participation in the ISO (Optics)
Table of Contents

- Administration of Standards
- American Domestic Standards
- ISO Standards
- Responsibilities of the OEOSC
- Standards for Measuring Veiling Glare
Acronyms and Abbreviations

American Domestic Standards

- ASC OP – Accredited Standards Committee for Optics
- TF – Task Force (or sub-committee)
Structure of ASC OP

- TF1: Optical Materials (Visible Light)
- TF2: Surface Imperfections
- TF3: Wavefront Measurement
- TF4: Drawings
- TF6: Infrared Materials
- TF7: Laser Damage
Structure of ASC OP

- TF2: Surface Imperfections
  - OP1.002 - Surface Imperfections
Structure of ASC OP

◆ TF3: Wavefront Measurement
  ▸ OP1.004: Optical Wavefront Measurement
    → Zernike description
  ▸ OP1.005: Statistical Evaluation of Surfaces
    → Mid-spatial frequencies
Structure of ASC OP

◆ TF7: Laser Damage
  ▸ New Standard Under Development
    → Address short-comings of ISO 21254
    → Statistical based testing protocol
    → Single shot testing protocol
    → Close co-operation with ISO committee
Table of Contents

◆ Administration of Standards
◆ American Domestic Standards
◆ ISO Standards
◆ Responsibilities of the OEOSC
◆ Standards for Measuring Veiling Glare
ISO International Standards

- **ISO** – International Standards Organization
- **TAG** – Technical Advisory Committee
- **TC172** – Technical Committee Number 172 (Optics and Photonics)
- **SC** – Sub-Committee
- **WG** – Working Group
Structure of ISO TC172

- SC1: Fundamental Optics
- SC3: Optical Materials and Components
- SC4: Telescopic Systems
- SC5: Microscopes and Endoscopes
- SC6: Geodetic and Surveying Instruments
- SC7: Ophthalmic Optics (Instrumentation and Medical Devices)
- SC9: Lasers and Electro-Optical Systems
Structure of ISO TC172

◆ SC1: Fundamental Optics
  ▪ WG1: General Optical Test Methods
  ▪ WG2: Drawings of Optical Elements and Systems
  ▪ WG3: Environmental Test Methods
  ▪ WG4: Data Transfer
Structure of ISO TC172

◆ SC1: Fundamental Optics
  ▸ WG1: General Optical Test Methods
    → 9358: Veiling Glare of Image Forming Systems
    → 14997: Surface Imperfections
    → 14999: Interferometric Measurement of Surfaces
    → TR: Wavefront Sensors
  ▸ WG2: Drawings of Optical Elements and Systems
  ▸ WG3: Environmental Test Methods
  ▸ WG4: Data Transfer
Structure of ISO TC172

- SC1: Fundamental Optics
  - WG1: General Optical Test Methods
  - WG2: Drawings of Optical Elements and Systems
    - 10110-7: Surface Imperfections
    - 10110-18: Material Imperfections
    - 10110-19: Optical Freeform Surfaces
  - WG3: Environmental Test Methods
  - WG4: Data Transfer
Structure of ISO TC172

◆ SC3: Optical Materials and Components
  ▸ WG1: Raw Optical Glass
  ▸ WG2: Coatings
  ▸ WG3: IR Materials
Structure of ISO TC172

- SC3: Optical Materials and Components
  - WG1: Raw Optical Glass
  - WG2: Coatings
  - WG3: IR Materials
Table of Contents

- Administration of Standards
- American Domestic Standards
- ISO Standards
- Responsibilities of the OEOSC
- Standards for Measuring Veiling Glare
ANSI/OEOSC TAG to ISO TC172

ISO

ANSI

OEOSC

American TAG to ISO TC172
ANSI/OEOSC ASC OP

ANSI

OEOSC

American ASC OP
Responsibilities of the OEOSC

- Administration
- Stewardship (of Democracy)
Responsibilities of the OEOSC

◆ Administration
  ▸ Preparation of Manuscripts
  ▸ Oversee Voting
  ▸ Conduct the official communications between the standards writers and ANSI or ISO
  ▸ Manage Meetings
  ▸ Supervise Membership
Responsibilities of the OEOSC

- Stewardship (of Democracy)
  - Openness
  - Fairness
  - Balance
Table of Contents

◆ Administration of Standards
◆ American Domestic Standards
◆ ISO Standards
◆ Responsibilities of the OEOSC
◆ Standards for Measuring Veiling Glare
Glare - International Standards

- ISO 9358: Veiling glare of image forming systems
  - ISO TC172-SC1-WG1
  - Deals with the optics separately from the detector

- ISO 18844: Digital Cameras – Image Flare Measurement
  - ISO TC42 (Photography) – WG3 (Image Measurement)
  - Deals with entire camera (lens, body, and sensor)

- IEC 62676-5: Video Surveillance – Image Quality
  - IEC TC79 (Alarm and Electronic Security Systems) - WG12 (Video Surveillance Systems)
Overview of Standards in Optics

Thank you for your attention!

www.oeosc.org
allen@oeosc.org
allen@triptar.com