



Technical Standards Program

ESTA Standards Watch

June 2021 Volume 25, Number 11

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Four ESTA standards reaffirmed and published

ANSI's Board of Standards Review approved the reaffirmation of four ESTA standards as American National Standards. You can download them for free at <https://tsp.esta.org/freestandards> or you can buy them for \$40 each from [ANSI](#) or [IHS](#).

ANSI E1.3 – 2001 (R2021), Entertainment Technology – Lighting Control Systems - 0 to 10 V Analog Control Specification, describes a method of controlling equipment by means of an analog control voltage. It is primarily intended for lighting control equipment (controllers and dimmers) although any equipment which might be controlled by a lighting controller (intelligent lighting, strobe lights, fog machines, etc.) could use this control method.

ANSI E1.27-1 - 2006 (R2021), Entertainment Technology - Standard for Portable Control Cables for Use with ANSI E1.11 (DMX512-A) and USITT DMX512/1990 Products, is a standard for portable DMX cables.

ANSI E1.30-1 - 2010 (R2021), EPI 23. Device Identification Subdevice , specifies a collection of properties which may be exposed by a DMP device to provide detailed information on the manufacturer, model, serial number, hardware and software revisions and other administrative details of the device. These properties are described in a standard format as a templated DDL (sub)device.

ANSI E1.30-4 - 2010 (R2021), EPI 26. Device Description Language (DDL) Extensions for DMX512 and E1.31 Devices, defines protocol specific extensions to Device Description Language for describing DMX512 devices.

Six ESTA standards in public review

Six standards are posted for public review on the ESTA website at https://tsp.esta.org/tsp/documents/public_review_docs.php. Comments are due before the end of the day noted for each. A day later . . . "Aw, you missed it." The sort order here is first by due-date and then by alphanumeric designation.

BSR E1.40, Recommendations for the Planning of Theatrical Dust Effects, gives guidance on planning theatrical dust effects to avoid injury from dust inhalation and from fire and deflagration. The working group proposes to reaffirm [the existing standard](#). Comment before the end of the day, June 21. The review is closed, over, finished, and done on June 22. As Pagliacci would put it, "La commedia è finita!"

BSR ES1.6, Event Safety -- Communications, applies to communications in the live event industry, and describes requirements for both internal communication and public information for live events and related activities. It provides guidelines and good practices for effective communication within the production and operation of a live event. It describes communication messaging and technology for internal operations and external groups, such as the audience or general public, with guidelines for assessment with all involved entities. The goal is to determine logistics of and provide channels for general, operational, management, security, health and safety information to the affected parties in a timely manner. While this document will address communicating with law enforcement, medical support, or other AHJs, this standard specifically does not address any communications within AHJs or military operations, as these systems are determined by those organizations and are beyond the scope of this document. Comment before the end of the day, June 21. If you wait until June 22, you've missed the deadline.

BSR ES1.4, Event Safety - Fire Safety Requirements, applies to fire safety in the live event industry, including concerts, festivals, sporting events, motorsports, community celebrations, theater and film production, corporate events, trade shows, and similar events, both indoors and outdoors. Fire safety is the identification and assessment of event specific fire risks, and the effects that fire and smoke will have to the life safety of all persons who may be affected. It includes those measures required to minimize the likelihood of a fire starting, means of egress, fire safety monitoring, and the methods used to limit the development, spread, and effects of fire. Comments are due no later than June 27.

BSR E1.20, Entertainment Technology--RDM--Remote Device Management Over DMX512 Networks, is being revised to clarify ambiguities, fix bugs, and incorporate some additional features. E1.20 is an extension to USITT DMX512 and ANSI E1.11 that allows for bi-directional communication on the primary data link. This allows a controller to discover RDM-enabled devices on the link, to set starting addresses and other configuration settings, and to request status messages. Comments are due before the end of the day June 28.

BSR E1.37-5, General Purpose Messages for ANSI E1.20, RDM, provides additional Get/Set parameter messages (PIDs) for use with the ANSI E1.20 Remote Device Management protocol. Comments are due before the end of the day on June 28. If you wait until June 29, you've missed it.

BSR E1.4-1, Entertainment Technology -- Manual Counterweight Rigging Systems, is a revision of ANSI E1.4-1 - 2016. It applies to permanently installed, manually operated counterweight systems of stage rigging hardware for the raising, lowering, and suspension of scenery, lighting, and similar loads. The revision includes changes made to enhance clarity, and to update the requirements for consistency with current recommended practices and technology. Comment by EOD July 25.

ICC hurricane resources

It's Atlantic hurricane season! The season runs from June 1 through November 30, with hurricanes bringing damaging winds, heavy rain, and storm surges that can cause flooding. The International Code Council is promoting its tools to protect life and property against extreme weather; among those tools is a hurricane resource page, available at <https://www.iccsafe.org/advocacy/safety-toolkits/hurricane-resources/>. It's a table of links to advice for dealing with a variety of disasters. The focus is on hurricanes and flooding, but some links also offer advice about wildfires—which may be useful on the Pacific coast as the West heads into what is expected to be a very hot, dry summer.

NFPA solicits comments on two TIAs about air conditioners and GFCIs

The NFPA has posted two TIAs on the document information page for [NFPA 70, National Electrical Code](#) under the “Current & Prior Editions” tab. The NFPA is soliciting public comments on:

- Proposed Tentative Interim Amendment (TIA): No. 1589, Reference: 210.8(F), comment closing date: 19 July 2021
- Proposed Tentative Interim Amendment (TIA): No. 1593, Reference: 210.8(F), comment closing date: 19 July 2021

The tentative interim amendments are to delay the implementation of some new requirements in the 2020 NEC.

GFCI protection was expanded in the 2020 NEC without HVAC component and equipment safety standards being harmonized with GFCI amperage limits. Currently the UL standard that HVAC equipment is listed to (UL 1995) has no requirements for leakage current if the unit is hard-wired, as most residential air conditioners are. In the future, HVAC equipment will be listed to UL 60335-2-40, which sets a limit of 10 mA of leakage current. This new standard is not mandatory until 1 January 2024, but this limit is higher than the 5 mA nominal trip level in UL 943 for GFCI breakers, so it and the NEC are not congruent.

This lack of coordination is leading to nuisance tripping, a big problem as the season for hot and humid weather is arriving. Some builders in Texas are reporting consistent GFCI breaker tripping on HVAC systems, effectively rendering their new homes without air conditioning.

NIST offers inclusive language guidance

To help writers express ideas in language that is clear and welcoming to all readers, the National Institute of Standards and Technology has released new guidance on effective wording in technical standards. The document, [Guidance for NIST Staff on Using Inclusive Language in Documentary Standards \(NISTIR 8366\)](#), was created primarily for the benefit of NIST staff experts who participate in the development of documentary standards as expert collaborators and leaders. However, because NIST authors often work with industry standards development organizations, the technical agency has made the guidance available to the public.

The guidance is based on three sources: NIST Technical Series Publications Author Instructions; the American Psychological Association Style Guide; and the Chicago Manual of Style. The sources provide suggestions on inclusive language, including examples of words or expressions to avoid. As guidance, this provides standards participants with a tool to assist in how to apply these suggestions to their work. Information on inclusive language policies and guidance by various standards developing organizations is included.

Access the NIST guidance document at <https://nvlpubs.nist.gov/nistpubs/ir/2021/NIST.IR.8366.pdf>. See the [NIST's press release](#) for more information.

WTO Technical Barrier to Trade notifications

Notify US, the U.S. Department of Commerce's service to announce Technical Barrier to Trade filings, has announced TBTs that may be of interest to *Standards Watch* readers. If you have a problem with any TBT, you can protest through your representative to the World Trade Organization.

Canada Notification CAN/643

Date issued: 9 June 2021

Agency responsible: Department of Innovation, Sciences and Economic Development

National inquiry point: Foreign Affairs, Trade and Development Canada

Products covered: Radiocommunications

Title: Consultation of RSS-248, Issue 1, (9 pages in English)

Description of content: Notice is hereby given by the Ministry of Innovation, Science and Economic Development Canada that the following consultation has been released: - RSS-248, Issue 1, Radio Local Area Network (RLAN) Devices in the 5925-7125 MHz Band, which sets out the certification requirements for licence-exempt low-power RLAN devices operating indoors in the frequency band 5925-7125 MHz.

Objective and rationale: Consultation; Other

Proposed date of adoption: Not given by country

Proposed date of entry into force: Not given by country

Final date for comments: 16 August 2021

Full text: [https://tsapps.nist.gov/notifyus/docs/wto_country/CAN/full_text/pdf/CAN643\(english\).pdf](https://tsapps.nist.gov/notifyus/docs/wto_country/CAN/full_text/pdf/CAN643(english).pdf)

Russian Federation Notification RUS/119

Date issued: 8 June 2021

Agency responsible: Eurasian Economic Commission

National inquiry point: Russian Scientific and Technical Centre for Information on Standardization, Metrology and Conformity Assessment STANDARTINFORM

Products covered: Machines and equipment

Title: Draft Amendments No. 4 to the technical regulation of the Customs Union "On Safety of Machines and Equipment" (TR CU 010/2011) (7 pages in Russian)

Description of content: clarification and specification of certain provisions of the CU TR 010 /201 , taking into account the accumulated experience of its application; elimination of duplications with the technical regulations CU TR 004/2011 and CU TR 031/2012; ensuring uniform understanding and compliance with the requirements of the CU TR 010/2011 for the release of machinery and equipment in the customs territory of the Eurasian Economic Union.

Objective and rationale: Prevention of deceptive practices and consumer protection; Protection of human health or safety

Relevant documents: Draft Amendments No. 4 to the technical regulation of the Customs Union "On Safety of Machines and Equipment" (TR CU 010 /2011)

Proposed date of adoption: Not given by country

Proposed date of entry into force: Not given by country

Final date for comments: 26 August 2021

Full text: [https://tsapps.nist.gov/notifyus/docs/wto_country/RUS/full_text/pdf/RUS119\(russian\).pdf](https://tsapps.nist.gov/notifyus/docs/wto_country/RUS/full_text/pdf/RUS119(russian).pdf)

ANSI public review announcements

The following documents have been announced for public review by ANSI and may be of material interest to *Standards Watch* readers. If you have comments on them, please send your comments before the deadline to the person indicated and to ANSI's Board of Standards Review at psa@ansi.org.

Due 12 July 2021

BSR/AWS C4.4/C4.4M-202X, Recommended Practices for Heat Shaping and Straightening with Oxyfuel Gas Heating Torches (new standard)

This third edition of Recommended Practices for Heat Shaping and Straightening covers the shaping of metal products by prudent use of heat to obtain a desired configuration. The text reviews the theory and analytical calculations that explain how heat shaping and straightening occurs. Sample calculations and tables are presented for typical materials. General heating patterns and heat shaping and straightening techniques are discussed. Specific heating applications are illustrated for various sections.

Single copy price: \$38.00

Order from: Jennifer Rosario, jrosario@aws.org

Send comments to: adavis@aws.org

BSR/NECA LPI 781-202x, Recommended Practice for Installing and Maintaining Lightning Protection Systems (new standard)

This standard covers quality and performance criteria and best practices for lightning protection system design and installation for both new construction and existing structures. The fundamental components of lightning protection systems are covered as well as fundamental information related to lightning protection system design and system maintenance.

Single copy price: \$30.00 member/ \$60.00 non-member

Order from and send comments to: neis@necanet.org

BSR/UL 62368-1-202x, Standard for Safety for Audio/video, Information and Communication Technology Equipment – Part 1: Safety Requirements (identical national adoption of IEC 62368-1 and revision of ANSI/UL 62368-1-2019)

This proposal for UL 62368-1 covers: (1) Revisions to reflect updates to correlate with NFPA 70:2020 and NFPA 75:2020; (2) Removal of 60320-1 from Annex DVF.

Single copy price: Free

Access and offer comments at: <https://csds.ul.com/Home/ProposalsDefault.aspx>

Due 19 July 2021

BSR/ASB Std 146-202x, Standard for Resolving Commingled Remains in Forensic Anthropology (new standard)

This document provides laboratory and field procedures and requirements for resolving commingled remains. The techniques presented include size, age, and sex similarities, articulation between skeletal elements, taphonomic similarities, and reconstruction of fragmentary remains. The document also describes the determination of MNI (Minimum Number of Individuals), as well as the LI (Lincoln Index) and MLNI (Most Likely Number of Individuals) based on the number of paired and unpaired bones. Please note that comments on a re-circulation will only be accepted on revised sections of a document, comments made to text not revised from the previous public comment period will not be accepted.

Single copy price: Free

Obtain an electronic copy from: <http://www.asbstandardsboard.org/notice-ofstandard-development-and-coordination/>

Send comments to: asb@aafs.org

Due 27 July 2021

BSR/NFPA 780-202x, Standard for the Installation of Lightning Protection Systems (revision of ANSI/NFPA 780-2020)

This document shall cover traditional lightning protection system installation requirements for the following: (1) Ordinary structures; (2) Miscellaneous structures and special occupancies; (3) Heavy-duty stacks; (4) Structures containing flammable vapors, flammable gases, or liquids that can give off flammable vapors; (5) Structures housing explosive materials; (6) Wind turbines; (7) Watercraft; (8) Airfield lighting circuits; and (9) Solar arrays.

This document shall address lightning protection of the structure but not the equipment or installation requirements for electric generating, transmission, and distribution systems, except as given in Chapter 9 and Chapter 12. Electric generating facilities whose primary purpose is to generate electric power are excluded from this standard with regard to generation, transmission, and distribution of power. Most electrical utilities have standards covering the protection of their facilities and equipment. Installations not directly related to those areas and structures housing such installations can be protected against lightning by the provisions of this standard. This document shall not cover lightning protection system installation requirements for early streamer emission systems or charge dissipation systems.

Access and offer comments at: www.nfpa.org/780Next

BSR/NFPA 855-202x, Standard for the Installation of Stationary Energy Storage Systems (revision of ANSI/NFPA 855-2020)

This standard applies to the design, construction, installation, commissioning, operation, maintenance, and decommissioning of stationary energy storage systems (ESS), including mobile and portable ESS installed in a stationary situation and the storage of lithium metal or lithium-ion batteries.

Access and offer comments at: www.nfpa.org/855Next

Due 3 August 2021

BSR/UL 4041-202x, Standard for Outdoor Furniture (new standard)

(1) Proposed adoption of the first edition of the Standard for Outdoor Furniture, UL 4041, as a UL standard for the U.S. and Canada.

Single copy price: Free

Access and offer comments at: <https://csds.ul.com/Home/ProposalsDefault.aspx>

CSA public review announcements

The CSA Group has announced draft documents for public review that might be of interest to Standards Watch readers. To participate in CSA public reviews, please visit: <http://publicreview.csa.ca/>.

Due 11 July 2021

C22.2 No. 41, Grounding and bonding equipment (new edition)

This standard applies to grounding and bonding equipment for use in accordance with the Canadian Electrical Code, Part I, CSA C22.1, in Canada, the National Electrical Code, NFPA 70, in the United States, or the Standard for Electrical Installations, NOM-001-SEDE, in Mexico. It applies to:

- a) ground clamps, bonding devices, grounding bushings, water-meter shunts, grounding electrodes, and the like used in a grounding system;
 - b) equipment for making electrical connections between the grounding conductors used in electrical power systems, non-current-carrying metal parts of electrical equipment, armored grounding wires, metal raceways, and the like; and grounding electrodes.
- (and more . . .)

Due 20 July 2021

Z259.15, Anchorage connectors

This standard specifies performance, design, testing, marking, classification, and other requirements related to anchorage connectors in travel-restraint, fall-arrest, work-positioning, and suspended component/tie-back line systems.

New ANS projects

ANSI has announced the following new projects that might materially affect *Standards Watch* readers—or at least be interesting to them. Contact the developer if you (a) want to be involved in the project, (b) object to the project and wish it to be abandoned, or (c) if you would like to point out that its scope is covered by an existing standard, thereby possibly making the project redundant or conflicting.

BSR/ASHRAE Standard 185.3-202X, Method of Testing In-Room Devices and Systems for Microorganism Removal or Inactivation in a Chamber (new standard)

There is no standardized test method available to adequately describe performance of products claiming to inactivate infectious particles in the air, to enhance removal of infectious particles by capture or settling on surfaces, or both in actual use conditions. This proposed standard will be applicable to any product used in rooms and making claims of air or surface disinfection of infectious particles. This standard will allow direct comparisons of product efficacy that will be highly valuable to building owners, design engineers, and general commercial-industrial consumers looking to improve overall air cleaning.

Contact: Susan LeBlanc, sleblanc@ashrae.org

BSR/AWC FDS-202x, Fire Design Specification for Wood Construction (new standard)

This proposed standard is intended to provide designers with a document that includes procedures, calculations, and specific language necessary for design of wood buildings to comply with general design requirements in codes and other referenced standards. This new standard will incorporate provisions from AWC's National Design Specification for Wood Construction for the design of exposed wood members and will expand those provisions to provide calculation procedures to address the added fire resistance and thermal benefits of protection provided by use of additional wood, gypsum panel products, and insulation. In addition, these additional calculation provisions will provide standardized methods of calculating thermal separation and burn

through requirements as in ASTM E119 and as provided in AWC's Technical Report 10: Calculating the Fire Resistance of Exposed and Protected Wood Members.
Contact: Bradford Douglas, bdouglas@awc.org

BSR/CTA 2076.2-202x, Indoor Network Navigation Systems for People who are Deaf, Hard of Hearing, and DeafBlind (new standard)

This standard builds upon the work in ANSI/CTA 2076 to specify requirements for the design of inclusive audio-based network navigation systems (IABNNS) for those who are deaf, hard of hearing, and DeafBlind. This standard helps design professionals achieve an inclusive environment through IABNNSs that augment the physical environment by the provision of visual-, haptic-, and audio-based information about environments for users.

Contact: Catrina Akers, cakers@cta.tech

BSR ICEA S-118-746-202x, Standard for Standard [sic] for Category 8, 100 Ohm, Indoor Cables for use in LAN Communication Wiring Systems (new standard)

This standard covers mechanical, electrical, and flammability requirements for thermoplastic-insulated and jacketed copper conductor for use as horizontal cables or patch cordage. Depending upon the application and system requirements, this standard provides choices for materials and flammability ratings.

Contact: Khaled Masri, Khaled.Masri@nema.org

Final actions on American National Standards

The documents listed below may be of interest to *Standards Watch* readers and have been approved by the ANSI Board of Standards Review or by an ANSI-Audited Designator on the date noted.

ANSI/BIFMA X5.41-2021, Large Occupant Public and Lounge Seating (new standard), 24 May 2021

ANSI/IES LP-12-2021, Lighting Practice: IoT Connected Lighting (new standard), 27 May 2021

ANSI/UL 498D-2021a, Standard for Safety for Attachment Plugs, Cord Connectors and Receptacles with Arcuate (Locking Type) Contacts (revision of ANSI/UL 498D-2020), 25 May 2021

ANSI/UL 498F-2021, Standard for Safety for Plugs, Socket-Outlets and Couplers with Arcuate (Locking Type) Contacts (revision of ANSI/UL 498F-2020), 25 May 2021

Draft IEC & ISO documents

This section lists proposed documents that the IEC or ISO or both, are considering for approval and that may be of interest to *Standards Watch* readers. Anyone interested in reviewing and commenting on a document should order a copy from their national representative and submit their comments through them. Comments from US citizens on IEC documents should be sent to Charles T. Zegers at czegers@ansi.org. Comments from US citizens on ISO documents should be sent to Karen Hughes at isot@ansi.org. Any prices, if shown, are for purchases through ANSI. The sort order is first by due date then by the project identifier alphanumeric. Many of the dates listed are far in the past, but these are the dates in the announcements.

ISO/DIS 21931-1, Sustainability in buildings and civil engineering works - Framework for methods of assessment of the environmental, social and economic performance of construction works as a basis for sustainability assessment - Part 1: Buildings, 6 November 2016 [sic], \$125.00

ISO/FDIS 37169, Smart community infrastructures – Smart transportation by run-through train/bus operation in/between cities, 10 November 2020 [sic], \$62.00

ISO/DIS 10218-1.2, Robotics - Safety requirements - Part 1: Industrial robots, 10 July 2021, \$155.00

ISO/DIS 23704-2, General requirements for cyber-physically controlled smart machine tool systems (CPSMT) - Part 2: Reference architecture of CPSMT for subtractive manufacturing, 13 August 2021, FREE!!

44/915/CD, IEC TS 62998-3 ED1: Safety of Machinery - Safety-related sensors used for the protection of persons - Part 3: Sensor technologies and algorithms, 20 August 2021

SyCSmartCities/188/CD, IEC 60050-831 ED1: International Electrotechnical Vocabulary (IEV) - Part 831: Smart city systems, 20 August 2021

ISO/IEC DIS 23751, Information technology - Cloud computing and distributed platforms - Data sharing agreement (DSA) framework, 6 November 2026, \$93.00

ISO/FDIS 37180, Smart community infrastructures – Guidance on smart transportation with QR code identification and authentication in transportation and its related or additional services, 11 November 2026, \$53.00

ISO/IEC FDIS 24773-3, Software and systems engineering Certification of software and systems engineering professionals Part 3: Systems engineering, 12 November 2027, \$58.00

Recently published IEC & ISO documents

Listed here are documents recently approved by the IEC or ISO and listed in ANSI's *Standards Action* that may be of use or interest to *Standards Watch* readers. Prices shown are for purchases from the [ANSI Webstore](#).

IEC/PAS 63313 Ed. 1.0 en:2021, Position statement on germicidal UV-C irradiation - UV-C safety guidelines, \$89.00

ISO 10074:2021, Anodizing of aluminium and its alloys Specification for hard anodic oxidation coatings on aluminium and its alloys, \$111.00

ISO 37164:2021, Smart community infrastructures – Smart transportation using fuel cell light rail transit (FC-LRT), \$48.00

ISO 6707-4:2021, Buildings and civil engineering works – Vocabulary - Part 4: Facility management terms, \$48.00

ISO/PAS 5643:2021, Tourism and related services – Requirements and guidelines to reduce the spread of Covid-19 in the tourism industry, \$200.00

ISO/TS 22332:2021, Security and resilience - Business continuity management systems - Guidelines for developing business continuity plans and procedures, \$149.00

ISO/TS 30421:2021, Human resource management - Turnover and retention metrics, \$111.00

ISO/TS 30428:2021, Human resource management - Skills and capabilities metrics cluster, \$149.00

ISO/TS 30433:2021, Human resource management – Succession planning metrics cluster, \$111.00

TSP meeting schedule

The meeting schedule is posted at <https://www.esta.org/ESTA/meetings.php>. All the meetings will be by WebEx.

Control Protocols Working Group	11:00 – 13:00 EDT	Tuesday 27 July 2021
Electrical Power Working Group	15:00 – 17:00 EDT	Friday 23 July 2021
Event Safety Working Group	11:00 – 13:00 EDT	Friday 30 July 2021
Fog & Smoke Working Group	11:00 – 13:00 EDT	Friday 23 July 2021
Photometrics Working Group	15:00 – 17:00 EDT	Tuesday 27 July 2021
Rigging Working Group	11:00 – 13:00 EDT	Monday 26 July 2021
Stage Machinery Working Group	11:00 – 13:00 EDT	Friday 30 July 2021
Technical Standards Council	11:00 – 13:00 EDT	Monday 2 August 2021

EDT = UTC -4:00

ESTA Standards Watch

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If you would like to receive an email notice each time a new edition of *Standards Watch* is published, send a request to standards@esta.org.

The archive of *Standards Watch* issues back to the beginning of 2011 is available at <http://estalink.us/nn7a1>.

TSP donors who have made long-term, multi-year pledges

About the Stage
Actors' Equity Association
Altman Lighting
Barbizon Lighting Company
B-Hive Industries
Scott Blair
BMI Supply
Boston Illumination Group
Candela Controls
Chauvet
City Theatrical
Clark-Reder Engineering
Columbus McKinnon Corporation
Tracey Cosgrove and Mark McKinney
Bruce Darden
Doug Fleenor Design
Earl Girls Inc. EGI Pro
Electronic Theatre Controls
Entertainment Project Services
Geiger Engineers, PC
Tony Giovannetti
GLP German Light Products
Golden Sea Professional Equipment Limited
H & H Specialties
Harlequin Floors
High Output
Neil Huff
Hughston Engineering
IATSE Local 891
InCord
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Mike Garl Consulting
Mike Wood Consulting
Morpheus Lights
NAMM
Niscon
Oasis Stage Werks
Reed Rigging
Reliable Design Services
Robe
Rosco Laboratories
Rose Brand
Alan M. Rowe
Sapsis Rigging
Stage Equipment & Lighting
Stage Rigging
Stagemaker
Stageworks
Syracuse Scenery and Stage Lighting, Co.
Dana Taylor
Steve Terry
Texas Scenic Company
Theatre Projects Consultants
Theatre Safety Programs
TMB
Tyler Truss Systems
Vertigo
Vincent Lighting Systems
Steve Walker & Associates
Walt Disney Parks and Resorts
Westview Productions
WNP Services, Inc.

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VISIONARY LEADERS (\$50,000 & up)

ETC

PLASA

VISIONARY (\$10,000 & up; >100 employees/members)

Chauvet Professional

Cisco

Columbus McKinnon Entertainment Technology

Disney Parks Live Entertainment

ProSight Specialty Insurance

Robe

VISIONARY (\$5,000 & up; 20–100 employees/members)

Altman Lighting, Inc.

German Light Products

JR Clancy

McLaren Engineering Group

Rose Brand

Stage Rigging

Theatre Projects

Theatre Safety Programs

TMB

VISIONARY (\$500 & up; <20 employees/members)

About the Stage

B-Hive Industries, Inc.

Scott Blair

Boston Illumination Group

Candela Controls, Inc.

Clark Reder Engineering

Tracey Cosgrove & Mark McKinney

Doug Fleenor Design

EGL Event Production Services

Entertainment Project Services

Neil Huff

Interactive Technologies

Jules Lauve

Brian Lawlor

Michael Lay

Limelight Productions, Inc.

Link

John T. McGraw

Mike Garl Consulting

Mike Wood Consulting

Reed Rigging

Reliable Design Services

Alan Rowe

Sapsis Rigging Inc.

Steve A. Walker & Associates

Dana Taylor

Steve Terry

Vertigo

WNP Services

INVESTOR (\$3,000–\$9,999; >100 employees/members)

Actors' Equity Association

Barbizon Lighting Company

Golden Sea Professional Lighting Provider

IATSE Local 728

IATSE Local 891

Lex

NAMM

Rosco Laboratories

Texas Scenic Company

INVESTOR (\$1,500–\$4,999; 20–100 employees/members)

Area Four Industries

American Society of Theatre Consultants

BMI Supply

City Theatrical Inc.

H&H Specialties, Inc.

InterAmerica Stage, Inc.

Lycian Stage Lighting

Niscon Inc.

Tomcat Staging, Lighting and Support Systems

INVESTOR (\$200–\$499; <20 employees/members)

ChamSix
Bruce Darden
Guangzhou Color Imagination LED Lighting
Indianapolis Stage Sales & Rentals, Inc.
Kenney Drapery Associates, Inc.
L1 Inc.
Liberal Logic, Inc.
Lighting Infusion LLC
Luminator Technology Group
Scott Madaski

Mediam Sp. zo.o.
Karen Miller
Nanyi Audio & Lighting Enterprise Co., Ltd.
Qdot Lighting Ltd.
Sanko Device Co. Ltd.
Show Light Oy
Shawn Silverman
Tracy Underhill
Steve Vanciel
Ralph Weber

SUPPORTER (\$50 - \$2,999; >100 employees/members)

Harlequin Floors

SUPPORTER (\$50 - \$1,499; 20–100 employees/members)

ACT Lighting Inc./AC Power Distribution
ARM Automation, Inc.
Ian Foulds, IATSE Local 873
General Lighting Electronic Co. Ltd.
Guangzhou Shenghui Electronic Technology
Guangzhou YaFeng Optoelectronic Equipment Co.
Guangzhou Yilaiming Photoelectric Technology Co.,
Ltd.
ELECTRON SA
HAYA Light Equipment Ltd. Co.
High Output
InCord
Intella Systems Co., Ltd.
iWeiss
LA ProPoint, Inc.
LUPO SRL
Moss LED Inc.

Nanshi Lighting
Oasis Stage Werks
Shenzhen Ifountain Technology
Skjonberg Controls Inc.
Stage Equipment & Lighting
Stagemaker
Stageworks
Syracuse Scenery and Stage Lighting Co., Inc.
Taurus Light Co. Ltd.
Ultratec Special Effects
Vincent Lighting Systems
Wuhan Zhongtian Jiaye Mechanical & Electrical Eng.
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Zhuhai Shengchang Electronics Co.

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Alyxander Bear
Capture Visualisation AB
Chip Scott Lighting Design
DMX Pro Sales
Emilium GmbH
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Foshan Leiyuan Photoelectric Co. Ltd.
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