



Technical Standards Program

ESTA Standards Watch

Late April 2024 Volume 28, Number 8

Table of Contents

Seven ESTA standards in public review.....	1
Comments due before 13 May 2024.....	1
Comments due before 20 May 2024.....	1
Comments due before 3 June 2024.....	2
Register for NATEAC 2024—there won't be another one until 2028!.....	2
WTO Technical Barriers to Trade notifications.....	3
G/TBT/N/KOR/1208.....	3
G/TBT/N/USA/2117.....	3
G/TBT/N/CHN/1847.....	4
ANSI public review announcements.....	5
Due 26 May 2024.....	5
Due 10 June 2024.....	5
Due 25 June 2024.....	5
New ANS projects.....	6
Final actions on American National Standards.....	7
Draft IEC & ISO documents.....	7
Recently published ISO & IEC documents.....	8
Editors.....	8
TSP meetings.....	9
Investors in Innovation, supporters of ESTA's Technical Standards Program.....	10

Seven ESTA standards in public review

Seven ESTA standards are in public review at <http://estalink.us/pr>. They are a mix of brand new standards, standards previously published and being considered for reaffirmation, and one standard being considered for withdrawal.

Comments due before 13 May 2024

BSR E1.31, Lightweight streaming protocol for transport of DMX using ACN (revision of ANSI E1.31 – 2018)

This standard describes a mechanism to transfer DMX512A packets over a TCP/IP network using a subset of the ACN protocol suite. It covers data format, data protocol, data addressing, and network management, including support for both IPv4 and IPv6. It also outlines a synchronization method to help ensure that multiple sinks can process this data concurrently when supervised by the same controller. Revision is necessary to correct internal reference errors within the currently published version, ANSI E1.31-2018.

Comments due before 20 May 2024

BSR E1.44-2014 (R20xx) Common Show File Exchange Format for Entertainment Industry Automation Control Systems - Stage Machinery (reaffirmation of ANSI E1.44 – 2014)

This standard addresses common show file requirements for automated stage machinery control systems used in entertainment venues. It establishes a minimum level of design and performance guidelines for the integrated

software design of processor based machinery control equipment. The purpose of this guidance is to ensure that users will be able to transfer, modify and customize a 'least common denominator' show file for the data required to tour entertainment productions from one facility to another, even when the facilities' physical conditions, hoist inventories, and placements, and the machinery control consoles and data topology differ.

BSR E1.50-1, Requirements for the Structural Support of Temporary LED, Video & Display Systems
(revision of ANSI E1.50-1 – 2017)

This draft is a revision of ANSI E1.50-1-2017. It provides updated guidance for lateral design loads, and for situations where technicians must climb on the structure at any time during installation, use, and dismantle.

Comments due before 3 June 2024

ANSI E1.30-3 - 2009 (R2019), EPI 25 Time Reference in ACN Systems Using SNTP and NTP

ANSI E1.30-3, EPI 25, Time Reference in ACN Systems Using SNTP and NTP, is another recipe in the E1.30 cookbook for ACN. It offers ways of providing a time reference so that events can be synchronized. It's being considered for withdrawal because its requirements are outdated and no longer useful.

ANSI E1.53 - 2019, Overhead mounting of luminaires, lighting accessories, and other portable devices: specification and practice

This standard covers specifications for the primary and secondary mounting devices for portable stage and studio luminaires and accessories, and for similarly fastened special effects machines. The standard offers guidance on how to properly affix these mounting devices. It's being considered for reaffirmation.

BSR E1.80, Pinout Configuration Types for Special-Purpose Multicircuit Cable Systems

This standard addresses the pinout assignments for 19-pin Socapex-style connectors used for various types of power distribution systems in the entertainment industry. It will establish standardized pinout assignments and type designations in order to reduce connection incompatibilities, thereby reducing the risk of shock and electrocution hazards, and the potential for equipment damage.

BSR ES1.6, Event Safety - Communications

This standard applies to communications in the live event industry and describes requirements for internal communication and public information for live events and related activities. It provides guidelines and good practices for effective communication within internal event production staff and with external groups, such as the audience and general public. This document addresses communicating with law enforcement, medical support, and AHJs, this standard does not address any communications within AHJs or within military operations.

Register for NATEAC 2024—there won't be another one until 2028!

NATEAC registration is open and the preliminary schedule has been announced! The registration cost of \$850 includes two full days of high-level sessions on the topic of Access, as well as the fan-favorite kickoff harbor cruise Saturday night, an after-party on Monday night—post education sessions—and the NATEAC Tuesday Theatre Tours, where attendees can tour some of the most state-of-the-art performance spaces in the city. Tickets to the Behind the Scenes charity dinner are available during registration for \$175 each. Proceeds from ticket sales will be donated to help BTS in their mission to fund grants for industry workers who are seriously ill or injured. Visit nateac.org for more information, the preliminary schedule, and to register. We hope to see you in NY in July!

WTO Technical Barriers to Trade notifications

The World Trade Organization has announced Technical Barrier to Trade filings that may be of interest to *Standards Watch* readers. If you have a problem with a TBT, you can protest through your representative to the World Trade Organization.

G/TBT/N/KOR/1208

Notifying Member: REPUBLIC OF KOREA

Agency responsible: National Radio Research Agency (RRA)

Products covered: Equipments subject to Conformity Assessment of Broadcasting and Communication Equipments

Title: Draft amendment of notification on Conformity Assessment of Broadcasting and Communication Equipment; (77 page(s), in Korean)

Description of content:

- Establishment of detailed procedures and reclassification of target equipment following the introduction of a self-conformity confirmation system (new Article 11, 12 / Article 18, new paragraph 4·5 / Article 27, new paragraph 3/new Annex Form No.21/revision Attached Table 1)
 - New procedures and methods for writing, disclosure, document storage, change, and termination of self-conformity confirmation equipment and reclassification of target equipment
- Establishment of detailed procedures for reporting and correcting nonconforming equipment (new Article 25 / new Annex Form No.22~24)
 - In cases where major defects in equipment that have undergone a conformity assessment are recognized, new procedures and methods for reporting nonconformity, submitting action plans and results such as correction and collection, and disclosing information on nonconforming equipment, etc.
- Designation of a domestic agent for an overseas manufacturer and clarification of agency matters, etc. (revision Article 30)
 - Clarify the basis for designation of a domestic agent for conformity assessment and agency matters and establish a new procedure to change the designated domestic agent.
- Revision of conformity assessment marking method (complete revision Attached Table 5)
 - When indicating that a conformity assessment has been received, it had to be indicated on both the equipment and packaging, but the marking method has been simplified so that it can be indicated on the equipment or packaging.
- Currentization of related provisions and reorganization of attached forms in accordance with revision of radio wave laws, etc. (revision Article 1, 3, 5, 8, 10, 13~24, 26~32 / revision Attached Table 4, 6, 7 / revision Annex Form No.1, 4, 5, 6, 8~10~13, 17~20)
 - Currentization of article numbers and related forms according to revision of radio waves laws and new notice provisions, etc.

Objective and rationale: As the Radio Waves Act was revised, details delegated by the Enforcement Decree of the Act were stipulated, such as the introduction of a self-conformity confirmation system to alleviate the burden on companies, the obligation to report and correct nonconforming equipment for consumer protection, the basis for designation and agency matters of domestic agents, and the simplification of conformity assessment indications

Relevant documents: RRA Public Notice No. 2024-42

Proposed date of adoption: 24 July 2024

Proposed date of entry into force: 24 July 2024

Final date for comments: 60 days from notification

Texts available from: <http://www.rra.go.kr> (available in Korean)

https://members.wto.org/crattachments/2024/TBT/KOR/24_02882_00_x.pdf

https://members.wto.org/crattachments/2024/TBT/KOR/24_02882_01_x.pdf

G/TBT/N/USA/2117

Notifying Member: UNITED STATES OF AMERICA

Agency responsible: Federal Communications Commission (FCC) [2148]

Products covered: 70/80/90 GHz bands; Radiocommunications (ICS code(s): 33.060); Satellite (ICS code(s): 33.070.40)

Title: Modernizing and Expanding Access to the 70/80/90 GHz Bands; Further Notice of Proposed Rulemaking; (6 page(s), in English

Description of content: Proposed rule; solicitation of comment - In this document, the Federal Communications Commission (Commission) seeks comment on the potential inclusion of ship-to-aerostat transmissions as part of maritime operations otherwise authorized in a Report and Order, and of Fixed Satellite Service (FSS) earth stations in the third-party database registration system used for terrestrial links in certain bands.

Objective and rationale: Protection of human health or safety; Harmonization

Relevant documents: 89 Federal Register (FR) 33306, 29 April 2024; Title 47 Code of Federal Regulations (CFR) Parts 25 and 101:

<https://www.govinfo.gov/content/pkg/FR-2024-04-29/html/2024-05391.htm>

<https://www.govinfo.gov/content/pkg/FR-2024-04-29/pdf/2024-05391.pdf>

<https://docs.fcc.gov/public/attachments/FCC-24-16A1.pdf>

This proposed rule is identified by WT Docket No. 20-133; FCC 24-16 and provides access to associated documents. The full text of the proposed rule is available from the Commission's website at <https://docs.fcc.gov/public/attachments/FCC-24-16A1.pdf>.

Documents are also accessible from the FCC's [Electronic Document Management System \(EDOCS\)](#) by searching the Docket Number. Comments are due on or before 4pm Eastern Time 29 May 2024 and reply comments are due on or before 4pm Eastern Time 28 June 2024. WTO Members and their stakeholders are asked to submit comments to the USA TBT Enquiry Point by or before 4pm Eastern Time on 28 June 2024. Comments received by the USA TBT Enquiry Point from WTO Members and their stakeholders will be shared with FCC and will also be submitted to the FCC's [Electronic Comment Filing System \(ECFS\)](#) if received within the comment period.

Modernizing and Expanding Access to the 70/80/90 GHz Bands; Report and Order; Final rule published 29 April 2024:

<https://www.govinfo.gov/content/pkg/FR-2024-04-29/html/2024-05390.htm>

<https://www.govinfo.gov/content/pkg/FR-2024-04-29/pdf/2024-05390.pdf>

<https://docs.fcc.gov/public/attachments/FCC-24-16A1.pdf>

Modernizing and Expanding Access to the 70/80/90 GHz Bands; Proposed Rule published 6 July 2020:

<https://www.govinfo.gov/content/pkg/FR-2020-07-06/html/2020-14064.htm>

<https://www.govinfo.gov/content/pkg/FR-2020-07-06/pdf/2020-14064.pdf>

<https://docs.fcc.gov/public/attachments/FCC-20-76A1.pdf>

Proposed date of adoption: To be determined

Proposed date of entry into force: To be determined

Final date for comments: 28 June 2024

Texts available from:

https://members.wto.org/crnattachments/2024/TBT/USA/24_02881_00_e.pdf

https://members.wto.org/crnattachments/2024/TBT/USA/24_02881_01_e.pdf

G/TBT/N/CHN/1847

Notifying Member: CHINA

Agency responsible: State Administration for Market Regulation (Standardization Administration of the P.R.C.)

Products covered: consumer laser pointers (HS code(s): 851310); (ICS code(s): 31.260

Title: National Standard of the P.R.C., Safety requirements for optical radiation of consumer laser pointers; (9 page(s), in Chinese)

Description of content: This document specifies the optical radiation safety requirements for consumer laser pointer products, mainly including safety requirements, measurement and evaluation, marking and description. This document applies to the production, detection, sales and use of consumer laser pointer products with a nominal wavelength in the visible range of 400 nm ~ 700 nm (including but not limited to laser products with indication, entertainment, office and other functions such as laser whip, laser shooting simulator, laser sight, etc.).

Objective and rationale: Consumer information, labelling; Protection of human health or safety

Proposed date of adoption: To be determined

Proposed date of entry into force: 6 months from adoption

Final date for comments: 60 days from notification

Texts available from: WTO/TBT National Notification and Enquiry Center of the People's Republic of China

Tel: +86 10 57954633/ 57954627

E_mail: tbt@customs.gov.cn

https://members.wto.org/crnattachments/2024/TBT/CHN/24_02855_00_x.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 26 May 2024

BSR/IACET 1-202x, Standard for Continuing Education and Training (revision of ANSI/IACET 1-2018)

The standard provides a framework of continuous improvement to developers of adult non-credit continuing education events. The standard provides guidance for organizations designing, developing and delivering continuing education and training (CE/T) programs and is intended for organizations that want to demonstrate: (1) Their learning events meet the requirements and rigor of an internationally recognized standard; (2) Their commitment to educational rigor, excellence and integrity, and; (3) A learner completing their program has completed a quality training program that adheres to an internationally recognized standard.

Send comments (copy psa@ansi.org) to: www.iacet.org/rfc

Due 10 June 2024

BSR S12.61-202x, Declaration and Verification of Noise Emission Values of Machinery, Equipment, and Products (revision of ANSI/ASA S12.61-2020)

The abstract will be substantially the same as the current abstract, but there may be slight changes once WG38 has deliberated and agreed on the revisions. Information on the acoustical noise emitted by machinery, equipment, and products is needed by consumers, manufacturers, building and land-use planners, governmental authorities, and others concerned about noise in order to make informed purchasing decisions.

Single copy price: \$136.00

Obtain an electronic copy from: standards@acousticalsociety.org

Send comments (copy psa@ansi.org) to: Nancy Blair-DeLeon <standards@acousticalsociety.org>

BSR/TIA 568.7-202x, Balanced single twisted-pair cabling and components standard for industrial premises (new standard)

Create a standard for defining the transmission requirements for industrial cabling and components supporting single balanced twisted-pair cabling for MICE2 and MICE3 environments. Specify components that meet the transmission requirements for cabling for Industrial Premises. This Standard establishes performance and technical criteria in support of single-pair applications such as Ethernet. The entire document is open.

Single copy price: \$109.00

Obtain an electronic copy from: standards-process@tiaonline.org

Send comments (copy psa@ansi.org) to: Cheryl Thibideau <standards-process@tiaonline.org>

Due 25 June 2024

BSR/ASME B30.12-202x, Handling Loads Suspended from Rotorcraft (revision of ANSI/ASME B30.12-2011 (R2021))

B30.12 applies to the load handling activity (LHA), of loads suspended from rotorcraft using a cargo sling or powered hoist, or other attaching means to lift, carry, pull, or tow a jettisonable load outside of the rotorcraft airframe.

Single copy price: Free

Order from: <https://cstools.asme.org/csconnect/PublicReviewPage.cfm>

Send comments (copy psa@ansi.org) to: Kathleen Peterson <peterstonk@asme.org>

New ANS projects

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

BSR/ISA 62443-2-4-202x, Security for industrial automation and control systems - Part 2-4: Security program requirements for IACS service providers (identical national adoption of IEC 62443-2-4:2023, Ed. 2.0 and revision of ANSI/ISA 62443-2-4-2018)

Stakeholders: Those responsible for specifying, designing, developing, implementing, or managing IACS, with applicability in other sectors.

Project Need: As part of the 62443 series, this standard addresses the critical issue of cyber security for industrial automation and control systems (IACS), with applicability in other sectors.

Interest Categories: Producers, users, regulatory / government, architect-engineer / engineer-constructors / integrators, and general.

Specifies a comprehensive set of requirements for security-related processes that IACS service providers can offer to the asset owner during integration and maintenance activities of an Automation Solution.

BSR/C137.13-202X, Standard for Lighting Systems Automated Fault Detection (AFD) for Networked Indoor Lighting Control Systems (new standard)

Stakeholders: Lighting control system manufacturers, Building management system manufacturers, Building owners and operators

Project Need: This project is needed as faults that lighting control systems are known to experience can negatively affect system performance and the ability of the system to meet occupant needs. Networked lighting control systems that automatically detect and report these faults can reduce the time it takes to restore nominal service, reduce maintenance time, and cost, and increase the confidence in energy code compliance.

Interest Categories: Producers, Users, General Interest

This standard describes characteristic events and anomalies known to occur in indoor lighting systems that negatively impact performance and how they might be automatically detected using available networked lighting system data. The unique service disruption that these events and anomalies produce are named and defined as faults. Detection is derived from capabilities in commercial networked lighting systems. The standard includes which faults are detected for annunciation to maintenance personnel.

BSR C82.77-10-202X, Lighting Equipment - Harmonic Emission Limits - Related Power - Quality Requirements (revision of ANSI C82.77-10-2021)

Stakeholders: LED Driver manufacturers, luminaire manufacturers, government entities, laboratories, and consultants

Project Need: This project is needed to add a new requirements and test methods for LED drivers with AUX Power Supplies as described in ANSI C137.4-2021, harmonic currents uncertainty determination, and inter-harmonics.

Interest Categories: Producers, Users, General Interest

This Standard specifies power quality limits, factors, and methods of measurement for lighting equipment. This Standard covers all types of lighting equipment that is used for general illumination (typically found in residential, commercial, and industrial applications) and which is connected to any of the following commonly distributed 60-Hz alternating current (AC) power line systems.

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. "Final actions" means "done for now." No standard is ever finished.

ANSI/ASA S1.16-2000 (R2024), Method for Measuring the Performance of Noise Discriminating and Noise Canceling Microphones (reaffirmation of ANSI/ASA S1.16-2000 (R2020)) Final Action Date: 4/18/2024

ANSI/ASA S12.60/Part 1-2010 (R2024), Performance Criteria, Design Requirements, and Guidelines for Schools - Part 1: Permanent Schools (reaffirmation of ANSI/ASA S12.60/Part 1-2010 (R2020)) Final Action Date: 4/16/2024

ANSI/AVIXA D402.02-2013 (R2024), Audiovisual Systems Performance Verification (reaffirmation of ANSI/INFOCOMM 10-2013) Final Action Date: 4/22/2024

INCITS/ISO/IEC 24392:2023 [2024], Cybersecurity - Security reference model for industrial internet platform (SRM- IIP) (identical national adoption of ISO/IEC 24392:2023) Final Action Date: 4/16/2024 |

INCITS/ISO/IEC 27071:2023 [2024], Cybersecurity - Security recommendations for establishing trusted connections between devices and services (identical national adoption of ISO/IEC 27071:2023) Final Action Date: 4/16/2024

ANSI/UL 5C-2016 (R2024), Standard for Surface Raceways and Fittings for Use with Data, Signal, and Control Circuits (reaffirmation of ANSI/UL 5C-2016 (R2020)) Final Action Date: 4/18/2024

Draft IEC & ISO documents

This section lists documents reported in ANSI's *Standards Action* that the IEC or the ISO or both are considering for approval and that may be of interest to *Standards Watch* readers. Anyone interested in reviewing and commenting should order a copy from their national representative and submit their comments through them. Comments from US citizens on ISO documents must be sent to ANSI's ISO Team (isot@ansi.org), and must be submitted electronically in the approved ISO template as a Word document. US comments on IEC documents should be sent to Tony Zertuche, General Secretary, USNC/IEC, at ANSI's New York offices (tzertuche@ansi.org). ISO and IEC Drafts can be made available by contacting ANSI's Customer Service department, sales@ansi.org.

ISO/IEC DIS 16466, Information Technology - 3D Printing and scanning - Assessment methods of 3D scanned data for 3D printing model - 7/4/2024, \$82.00

120/370/CD, IEC 62933-4-3 ED1: Electrical energy storage(EES) systems - Part 4-3: The protection requirements of BESS according to the environmental conditions and location types, 06/14/2024

34C/1596(F)/FDIS, IEC 61347-1 ED4: Controlgear for electric light sources - Safety - Part 1: General requirements, 05/03/2024

34C/1598(F)/FDIS, IEC 61347-2-11 ED2: Controlgear for electric light sources - Safety - Part 2-11: Particular requirements - Miscellaneous electronic circuits used with luminaires, 05/03/2024

34C/1599(F)/FDIS, IEC 61347-2-13 ED3: Controlgear for electric light sources - Safety - Part 2-13: Particular requirements - Electronic controlgear for LED light sources, 05/03/2024

34A/2394/CDV, IEC 63554 ED1: LED lamps – Safety requirements, 07/12/2024

34A/2395/CDV, IEC 63555 ED1: LED Light sources - Performance requirements, 07/12/2024

116/755(F)/FDIS, IEC 62841-2-20 ED1: Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 2-20: Particular requirements for hand-held band saws, 05/17/2024

116/766/NP, PNW 116-766 ED1: Electric motor-operated handheld tools, transportable tools and lawn and garden machinery - Safety - Part 3-16: Particular requirements for transportable belt sanders, disc sanders and belt/disc sanders, 07/12/2024

21A/880(F)/FDIS, IEC 61960-4 ED2: Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for portable applications - Part 4: Coin secondary lithium cells, and batteries made from them, 05/10/2024

21A/885/FDIS, IEC 63338 ED1: General guidance on reuse and repurposing of secondary cells and batteries, 05/31/2024

Recently published ISO & IEC documents

Listed here are documents recently approved by the ISO or IEC 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 62057-3 Ed. 1.0 b:2024, Electrical energy meters – Test equipment, techniques and procedures - Part 3: Automatic meter testing system (AMTS), \$103.00

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. Find back issues at <http://estalink.us/nn7a1>.

TSP meetings

Visit esta.org/meetings any time for the latest meeting schedule.

NATEAC 2024, New York City College of Technology, Brooklyn, NY

Thursday, July 11

9am - 6pm: TSP E1.73: NextGen-Uniform Device Representation (UDR) Task Group
Room A106

10am - 11am: TSP Followspot Working Group
Room A209

12pm - 1pm: TSP Fog & Smoke Working Group
Room A209

2pm - 5pm: TSP Stage Machinery Working Group
Room A209

6pm - 9pm: TSP Weapons Safety Working Group
Room A209

Friday, July 12

9am - 12pm: TSP NextGen Transport Task Group
Room A104

10am - 12pm: TSP Event Safety Working Group
A209

1pm - 5pm: TSP Control Protocols Working Group
Room A209

6pm - 9pm: TSP E1.77: sACN Security Task Group
Room A104

6pm - 8pm: TSP Rigging Working Group
Room A209

7pm - 10pm: ETCP Council
Room A106

Saturday, July 13

9am - 12pm: TSP E1.20 RDM Revision Task Group
Room A104

10am - 12pm: Members Advisory Committee
Room A106

10am - 12pm: TSP Electrical Power Working Group
Room A209

1pm - 3pm: ESTA Board Meeting
Room A106

1pm - 5pm: TSP E1.33 RDMnet Task Group
Room A104

1pm - 4pm: TSP Technical Standards Council
Room A209

Investors in Innovation, supporters of ESTA's Technical Standards Program

This lists the donors who have made contributions in the last 12 months.

VISIONARY LEADERS (\$50,000 & up)

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

Cisco	Disney Parks Live Entertainment
Columbus McKinnon Entertainment Technology	

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

Altman Lighting, Inc.	Theatre Projects
McLaren Engineering Group	Theatre Safety Programs
Rose Brand	TMB
Stage Rigging	

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

About the Stage	Michael Lay
B-Hive Industries, Inc.	Paul Lewkowicz
Scott Blair	Link
Boston Illumination Group	John T. McGraw
Candela Controls, Inc.	Mike Garl Consulting
Clark Reder Engineering	Mike Wood Consulting
Tracey Cosgrove & Mark McKinney	Lizz Pitsley
Doug Fleenor Design	Reed Rigging
Down Stage Right Industries Ltd.	Reliable Design Services
EGI Event Production Services	Alan Rowe
Entertainment Project Services	Sapsis Rigging Inc.
Neil Huff	Shur-Rig
Interactive Technologies	SBS Lighting
iStudio Projects	Steve A. Walker Associates
Jules Lauve	Dana Taylor
Brian Lawlor	Steve Terry
	Vertigo
	WNP Services

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

Actors' Equity Association	Lex
Golden Sea Professional Lighting Provider	NAMM
ETC	Texas Scenic Company
IATSE Local 728	
IATSE Local 891	

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

American Society of Theatre Consultants	InterAmerica Stage, Inc.
Area Four Industries	Lycian Stage Lighting
BMI Supply	Niscon Inc.
City Theatrical Inc.	Tomcat Staging, Lighting and Support Systems
H&H Specialties, Inc.	

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

Baxter Controls, Inc.
Steve Carlson
ChamSix
Concept Smoke Systems Ltd.
Bruce William Darden
Ian Foulds
Pat Grenfell
Liberal Logic, Inc.
Live Production Indonesia
Luminator Technology Group

Reid Neslage
Ondelight
Elizabeth E. Pittsley
Jessica Sanders
Shenzhen Pony Systems Tech Co., Ltd.
Sehr Gute GmbH
David Thomas
Techni-Lux
Tracy Underhill
Ralph Weber

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

Harlequin Floors

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

High Output
InCord
iWeiss
Oasis Stage Werks
Productions Unlimited Inc.
Stagemaker

Syracuse Scenery and Stage Lighting Co., Inc.
Vincent Lighting Systems
Wuhan Zhongtian Jiaye Mechanical & Electrical Eng.
Co.
Zeraus

SUPPORTER (\$50 - \$199; <20 employees/members)

Dennis G. Booth
Chip Scott Lighting Design
DMX Pro Sales
Matthew Douglas III
Todd Fouyer
David Gibbs
William B. Groener
Tim Hansen
Beverly and Tom Inglesby
Inventions Guité
KASUGA
Laser AV
Michele Lessor
Lighting Elements Inc.
Bill McCord
Motion FX

Northern Lights Electronic Design
PragmaLab
Eddie Raymond
Shanxi Tian Gong Sheng Optoelectronic Equipment
Technology Co.
Sigma Net
John Tringas
Stephen Vanciel
Patrick Wallace
Philip Watson
Mitchell Weisbrod

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