The National Electrical Manufacturers Association (NEMA) represents nearly 325 electrical equipment and medical imaging manufacturers that make safe, reliable, and efficient products and systems serving seven major markets:

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- Building Infrastructure
- Lighting Systems
- Industrial Products & Systems
- Utility Products & Systems
- Transportation Systems
- Medical Imaging

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Top 5 Standards by Volume

- ANSI Z535 Safety Alerting Standards, a series of American National Standards for safety signs, symbols, and colors
- ANSI/NEMA MW 1000 Magnet Wire
- NEMA 250 Enclosures for Electrical Equipment
- NEMA MG 1 Motors & Generators
- NEMA PB 1.1 General Instructions for Proper Installation, Operation, and Maintenance of Panelboards Rated 600 V or Less

New Releases in 2018

NEMA 250 Enclosures for Electrical Equipment (1,000 Volts Maximum)

NEMA SM 1 Guide to General-Purpose Synchronous Motors without Excited Rotor Windings

ANSI/NEMA WC 74/ICEA S-93-639 5-46 kV Shielded Power Cable for Use in the Transmission and Distribution of Electric Energy

ANSI/NEMA WC 58/ICEA S-75-381 Portable and Power Feeder Cables for Use in Mines and Similar Applications

ANSI C78.62717 American National Standard for Electric Lamps—LED Modules for General Lighting—Performance Requirements

ANSI C78.62612 American National Standard for Electric Lamps—Self-Ballasted LED Lamps—Performance Specifications

NEMA TS 8 Cyber and Physical Security for Intelligent Transportation Systems (ITS)

NEMA/MITA XE P1 Modification of Image Displays of Interventional X-ray Equipment: Issues to be Considered

Medical Imaging

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Outlet Branch Receptacle (OBC)
Addresses OBC AFCIs. AFCIs are available as circuit breakers (CBs) and as receptacles. OBC AFCIs are tested and listed to UL 1699A requirements. Both types can be installed per the 2014 National Electrical Code®. A stand alone paper is available for each AFCI type. The OBC AFCI is described in a similar document available at www.nema.org/Standards/Pages/Outlet-Branch-Receptacle.aspx. Cross-referencing the two papers provides the user/specifier/installer with all the important facts to decide which type best suits the intended installation.

Arc Welding

ANSI/IEEE 60974-1-2008
American National Standard for Arc-Welding Equipment—Part 1 Welding Power Sources

ANSI/IEEE 60974-2-2009
American National Standard for Arc-Welding Equipment—Part 2 Liquid Cooling Systems
Specifies safety and construction requirements for industrial and professional liquid cooling systems used in arc welding and allied processes to cool torches. An adoption, with U.S. differences, of the second edition of IEC 60974-2 (2007).

ANSI/IEEE 60974-3-2009
American National Standard for Arc-Welding Equipment—Part 3 Arc Striking and Stabilizing Devices

ANSI/IEEE 60974-5-2009
American National Standard for Arc-Welding Equipment—Part 5 Wire Feeders
Details requirements for safety and performance for industrial and professional equipment used in arc welding and allied processes to feed filler wire. An adoption, with U.S. differences, of the second edition of IEC 60974-5 (2007).

ANSI/IEEE 60974-7-2009
American National Standard for Arc-Welding Equipment—Part 7 Torches
Specifies safety and construction requirements for torches (consisting of torch bodies, cable-hose assemblies and other components) used in arc welding, plasma cutting and other allied processes. An adoption, with U.S. differences, of the second edition of IEC 60974-7 (2005).
ANSI/IEC 60974-8-2008
American National Standard for Arc-Welding Equipment—Part 8 Gas Consoles for Welding and Plasma Cutting Systems
Specifies requirements for safety and performance for gas consoles intended to be used with combustible gases or oxygen. An adoption, with U.S. differences, of the first edition of IEC 60974-8 (2004).
$90

ANSI/IEC 60974-11-2009
American National Standard for Arc-Welding Equipment—Part 11 Electrode Holders
$72

ANSI/IEC 60974-12-2009
American National Standard for Arc-Welding Equipment—Part 12 Coupling Devices for Welding Cables
Enumerates safety and performance requirements of coupling devices for cables used in welding (except underwater welding) and allied processes. The coupling devices covered are designed for connection and disconnection without the use of tools. An adoption, with U.S. differences, of the second edition of IEC 60974-12 (2005).
$72

Electric Arc-Welding Power Sources
Defines performance characteristics, ratings and test procedures for ac and dc arc-welding apparatus and associated equipment, as well as recommended installation and test procedures for high-frequency stabilized arc-welding machines.
$70

Semi-Automatic Wire-Feed Systems for Arc Welding
 Defines construction standards, performance characteristics and test procedures for wire-feed systems used in most types of arc-welding processes.
$50

NEMA EW 4-2009
Graphic Symbols for Arc-Welding and Cutting Apparatus
Establishes graphic symbols for arc-welding and cutting apparatus that identify controls, indicators, connection points, junctions and processes. Usage examples are also provided.
$172

NEMA EW 6-2006
Guidelines for Precautionary Labeling for Arc-Welding and Cutting Products
Provides guidelines for manufacturers and suppliers in the arc-welding and cutting industry to assist them in preparation of precautionary labels for their products. Guidelines cover content, format and placement of text-only, text-and-symbol, symbol-only and multi-language labels.
$101

NEMA EW 9-2012
Arc Welding Power Sources—Energy Consumption Testing and Labeling
Provides the necessary guidance for manufacturers and importers of arc welding power source equipment to uniform energy consumption reporting requirements of the Mexican Law for Sustainable Energy Use, published in the Official Gazette of Federation, on November 28, 2008, article 23.
$64

Batteries

American National Standard for Portable Primary Cells and Batteries with Aqueous Electrolyte—General and Specifications
Applies to portable primary cells and batteries with aqueous electrolyte and a zinc anode.
$140

ANSI C18.1M, Part 2-2017
American National Standard for Portable Primary Cells and Batteries with Aqueous Electrolyte—Safety Standard
Specifies performance requirements for portable primary batteries with aqueous electrolyte and zinc anode (non-lithium) to ensure their safe operation under normal use and reasonably foreseeable misuse.
$109

ANSI C18.2M, Part 1-2013
American National Standard for Portable Rechargeable Cells and Batteries—General and Specifications
Applies to portable rechargeable or secondary cells and batteries based on the following electrotechnical systems nickel cadmium, nickel metal hydride and lithium ion.
$118

ANSI C18.2M, Part 2-2014
American National Standard for Portable Rechargeable Cells and Batteries—Safety Standard
Specifies performance requirements for standardized portable lithium ion, nickel cadmium and nickel metal hydride rechargeable cells and batteries to ensure their safe operation under normal use and reasonably foreseeable misuse.
$59

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### Batteries

#### ANSI C18.3M, Part 1-2013
**American National Standard for Portable Lithium Primary Cells and Batteries—General and Specifications**
Applies to portable lithium primary cells and batteries, including the following electrochemical systems lithium carbon monofluoride, lithium manganese dioxide and lithium iron disulfide.

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#### ANSI C18.3M, Part 2-2017
**American National Standard for Portable Lithium Primary Cells and Batteries—Safety Standard**
Specifies tests and requirements for primary cells and batteries, including lithium carbon monofluoride, lithium manganese dioxide and lithium iron disulfide, to ensure their safe operation under normal use and reasonably foreseeable misuse.

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#### ANSI C18.4M-2017
**American National Standard for Portable Cells and Batteries—Environmental**
Sets forth some general considerations that should be taken into account when developing battery standards that balance the need to achieve the intended product performance while reducing adverse environmental effects, and outlines ways in which provisions in battery standards might affect the environment during the stages of its life cycle.

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### Busways & Accessories

#### NEMA BU 1.1-2005 (Spanish)
**Instrucciones Generales para el Manejo, Instalacion, Operacion y Mantenimiento de Electroductos Hasta 600 V Nominales o Menos**
Esta norma se aplica a productos para la distribución de energía eléctrica hasta 600 V o menos, compuestos de electroductos cerrados en secciones prefabricadas con una capacidad nominal de 100 A o más y estructuras y accesorios asociados, clasificados en la forma siguiente a) electroducto alimentador (interior o exterior), b) electroducto conectador (solamente interior), y c) accesorios necesarios para completar el sistema de electroducto. Esta norma no aplica a los electroductos metálicos cerrados como se describe en la Norma C37.23 de la ANSI/IEEE.

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#### NEMA BU 1.1-2010
**General Instructions for Handling, Installation, Operation and Maintenance of Busway Rated 600 V or Less**
Covers products for distribution of electric power at 600 V or less, consisting of enclosed sectionalized prefabricated busbars rated at 100 A or more and associated structures and fittings, classified as follows feeder busways (indoor or outdoor), plug-in busways (indoor only) and accessories required to complete the busway system.

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#### NEMA BU 1.2-2004
**Application Information for Busway Rated 600 V or Less**
Covers products for distribution of electric power at 600 V or less, consisting of enclosed sectionalized prefabricated busbars rated at 100 A or more.

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### Carbon/Manufactured Graphite

#### NEMA CB 1-2000 (R2012)
**Brushes for Electrical Machines**
Provides definitions, dimensions and tolerances, test procedures for physical properties, and test procedures for shunt connections for brushes used in the electrical manufacturing industry. Included are carbon, carbon graphite, graphite, electrographite, metal graphite, metal impregnated and resin-bonded brushes.

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#### NEMA CG 1-2013
**Manufactured Graphite/Carbon Electrodes**
This edition of NEMA CG 1 harmonized dimensions with two IEC documents (IEC/TR 62157 – Cylindrical Machined Carbon Electrodes—Nominal Dimensions and IEC 60239—Graphite electrodes for electric arc furnaces—Dimensions and designation). Therefore electrode dimensions are not contained in this document and instead reference directly to these IEC document.

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#### NEMA CG 2-2004
**Powdered Graphite**
Covers terminology and test methods for those physical and chemical properties relevant to the material characterization of powdered graphite, generally less than 75 microns, used in the electrical industry.

$87

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Communications & Signaling

ANSI/NEMA SB 40-2015
Communications Systems for Life Safety in Schools
Covers the application, installation, location, performance and maintenance of school communications systems and their components associated with the life safety of students, faculty, administrative staff and all other occupants affiliated with educational facilities.
$34

NEMA SB 1-2014
Quality Informational Guide for Automatic Fire Detection and Alarm Systems
Provides guidance to Authorities Having Jurisdiction (AHJ) for establishing programs to ensure highly reliable fire detection and alarm systems in his or her community. This document contains a recommended model ordinance to assist AHJ through improving the reliability of existing systems, including dealing with false, or nuisance, alarms.
$34

NEMA SB 2-2016
Training Manual on Fire Alarm Systems
Covers terminology, basic theory of operation, installation details, system start-up techniques and general maintenance of fire alarms, and is intended to be used as source material for the fire service, fire marshals and all fire alarm sales, design and installation organizations. It is ideal as a reference guide and can be used in a classroom setting for learning about fire alarm systems.
$34

NEMA SB 7-2013
Applications Guide for Carbon Monoxide Alarms and Detectors
Covers carbon monoxide (CO) detection devices, including single- and multiple-station CO alarms and system-connected CO detectors and sensors connected to a control unit.
$34

NEMA SB 10-2016
Audio Standard for Nurse Call Systems
Contains requirements and test procedures for evaluating audio quality of installed nurse call systems.
$51

NEMA SB 11-2017
Guide for Proper Use of System Smoke Detectors
Provides information about applications of smoke detectors used in conjunction with fire alarm systems. Outlines operating characteristics of detectors and environmental factors that aid or prevent their operation.
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NEMA SB 13-2012
Guide for Proper Use of Smoke Detectors in Duct Applications
Provides information concerning the proper use of smoke detectors in duct applications.
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NEMA SB 20-2015
Guide to Understanding Smoke Control Systems
This guide is intended to offer a general understanding of smoke control systems to individuals who have a need or desire for solid basic information but do not need the in-depth knowledge necessary to design smoke control systems.
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NEMA SB 23-2016
Guide for Application of Flame Detection
Provides information concerning the proper use of flame-detection systems. It covers the major technologies used for flame detection, application, selection, installation, and testing.
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NEMA SB 50-2014
Emergency Communications Audio Intelligibility Applications Guide
Assists specifiers and Authorities Having Jurisdiction with the concepts and terminology used to enhance intelligibility for emergency voice paging systems.
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NEMA SBP 1-2010
Looking Ahead to UL 2560
Discusses the upcoming UL standard for minimum performance of emergency call systems in senior living communities, including likely requirements.
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Multi-Criteria Detectors (MCD)
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NEMA SBP 3-2017
The Changing Communications within Fire Alarm System Reporting
Explains options for fire alarm system communications.
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NEMA SBP 4-2015
Low Frequency Audible Signals
Addresses the need for and the development of the low-frequency audible signal used in fire alarms, carbon monoxide (CO) alarms, and fire or CO alarm systems.
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NEMA SBP 5-2015
Considerations in Planning Code Call Implementation in Health Care Facilities
Assists facility developers and owners in designing a code call system and associated call handling processes, with the purposes of optimizing response time and complying with regulatory requirements.
$40

NEMA SBP 6-2008
UL 1069 Standard for Hospital Signaling and Nurse Call Equipment White Paper
These requirements cover the individual units employed to form a hospital nurse call system (NCS) intended to provide audible and visual communication between patients and hospital personnel. They also cover miscellaneous signaling equipment employed in hospitals.
$0

Conduits
Annular Space Protection of Openings Created by Penetrations of Tubular Steel Conduit, A Review of UL Special Service Investigation, File NC 546, Project 90NK11650
Summarizes the results of a study of various annular space protection materials installed in a concrete block wall, concrete floor assemblies, gypsum wallboard/wood joist/plywood deck floor-ceiling assemblies and two varieties of gypsum wallboard/steel stud wall assemblies.
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NEMA FB 2.40-2016
Installation Guidelines for Expansion and Expansion/Deflection Fittings
Provides recommended installation practices for fittings used to compensate for expansion and contraction in electrical raceways due to shear and lateral forces. When properly selected and installed, these fittings prevent harmful stresses in the raceway system and to supporting structures by safely permitting three-dimensional (linear, angular, and parallel) movement of the raceway.
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NEMA FB 2.10-2013
Selection and Installation Guidelines for Fittings for Use with Non-Flexible Electrical Conduit and Tubing
Reuse in accordance with the NEC®.
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NEMA FB 2.40-2016
Installation Guidelines for Expansion and Expansion/Deflection Fittings
Provides recommended installation practices for fittings used to compensate for expansion and contraction in electrical raceways due to shear and lateral forces. When properly selected and installed, these fittings prevent harmful stresses in the raceway system and to supporting structures by safely permitting three-dimensional (linear, angular, and parallel) movement of the raceway.
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NEMA FB 2.20-2014
Selection and Installation Guidelines for Fittings for Use with Non-Flexible Electrical Metallic Tubing (EMT) and Cable
Covers fittings that are a part of electrical raceway and cable systems designed for use as intended by the requirements of NFPA 70. Specifically covers fittings for use with non-flexible tubular raceways—rigid and intermediate metal conduit and EMT—and with flexible raceways and cable. Adopted by the U.S. Department of Defense.
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Conduit-in-Casing Construction
Lists the types of casings, conduits and spacers that are used, provides details about how the conduit-in-casing process works, and explains the process of laying power/communication cables under a surface obstruction.
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ANSI/NEMA FB 1-2014
Fittings, Cast Metal Boxes and Conduit Bodies for Conduit, Electrical Metallic Tubing (EMT) and Cable
Covers fittings that are a part of electrical raceway and cable systems designed for use as intended by the requirements of NFPA 70. Specifically covers fittings for use with non-flexible tubular raceways—rigid and intermediate metal conduit and EMT—and with flexible raceways and cable. Adopted by the U.S. Department of Defense.
$111

NEMA FB 2.20-2014
Selection and Installation Guidelines for Fittings for Use with Flexible Electrical Conduit and Cable
Offers practical information on correct product selection and industry-recommended practices for installation of fittings for flexible conduit and electrical metallic tubing in accordance with the NEC®.
$84

NEMA RN 1-2018
Polyvinyl Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit
Covers continuous PVC exterior coatings and corrosion-resistant interior coatings, as well as galvanized steel conduit, galvanized steel IMC, threaded couplings and elbows to which they may be applied.
$61

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<td>NEMA RN 2-1997</td>
<td>Packaging of Master Bundles for ERMC—Steel, EIMC—Steel, EMT—Steel</td>
<td>Covers recommendations for the size and banding of master bundles of ERMC—steel, EIMC—steel and EMT—steel, in 10-foot (3.05 m) lengths and the size and banding of master bundles of ERMC—steel and EMT—steel, in 20-foot (6.10 m) lengths.</td>
<td>$64</td>
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<td>NEMA TC 2-2013</td>
<td>Electrical PVC Conduit and Conduit</td>
<td>Covers electrical PVC conduit of types EPC-40 designed for normal-duty applications above ground and concrete encased applications or direct burial, and EPC-80 designed for heavy-duty (areas of physical damage) applications above ground and concrete encased applications or direct burial.</td>
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<td>NEMA TC 3-2016</td>
<td>PVC Fittings for Use with Rigid PVC Conduit and Tubing</td>
<td>Covers PVC fittings intended to be joined in the field by means of a solvent cement system to PVC rigid conduit tubing and other fittings, based on the outside diameters given in NEMA TC 2-2013.</td>
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<td>NEMA TC 6 &amp; 8-2013</td>
<td>Polyvinyl Chloride (PVC) Plastic Utilities for Underground Installations</td>
<td>Defines general requirements, performance requirements, test methods and marking for the following types of PVC plastic utilities duct intended for underground installation for communications and electrical wire and cable EB-20 and EB-35, designed for burial encased in concrete; DB-60; and DB-100 and DB-120, designed for direct burial without encasement in concrete.</td>
<td>$89</td>
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<td>NEMA TC 7-2016</td>
<td>Smooth Wall Coilable Electrical Polyethylene Conduit</td>
<td>Covers several types of high-density polyethylene (HDPE) conduit for use in providing a protective raceway for electrical cables buried underground. The HDPE conduit types in this specification can be installed direct buried or concrete encased. They are EPEC-17, EPEC-13.5, EPEC-40, EPEC-80, EPEC-11.</td>
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<td>NEMA TC 9-2004</td>
<td>Fittings for PVC Plastic Utilities Duct for Underground Installation</td>
<td>Defines general requirements, including materials, trade sizes, dimensions and workmanship for the following types of fittings for PVC plastic utilities duct used for underground installation of communications and electrical wire and cable EB, designed for encased burial in concrete when installed in trenches underground, and DB, designed for direct burial in trenches underground without a requirement for encasement in concrete.</td>
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<tr>
<td>NEMA TC 10-2014</td>
<td>Electrical Nonmetallic Tubing (ENT)</td>
<td>Covers ENT materials, dimensions and physical properties.</td>
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CONDUITS

NEMA TCB 3-2001 (R2009, R2016)
Covers recommendations for shipping, handling, storage, installation and joining of underground CCD for power, lighting, signaling and communications applications.
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Guidelines for the Selection and Installation of Smooth-Wall Coilable High-Density Polyethylene (HDPE) Conduit
Provides recommendations for the selection, handling and installation of underground High Density Polyethylene (HDPE) conduit or raceway for power, lighting, signaling, and communications applications.
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Metal Cable Tray Systems
Specifies requirements for metal cable trays and associated fittings designed for use in accordance with the rules of the CEC, Part I, and the NEC®.
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NEMA VE 2-2013
Cable Tray Installation Guidelines
Addresses shipping, handling, storing and installing cable tray systems. Information on maintenance and system modification is also provided. Corrections were incorporated into this standard on 2/8/2016. These corrections are viewable under “Complimentary Documents.”
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Connectors

ANSI C119.0-2015
Testing Methods and Equipment Common to the ANSI C119 Family of Standards
Covers methods and equipment for performing connector qualification tests common to the ANSI C119 family of standards. A complimentary copy will be given with purchase of any ANSI C119 standard.
$0
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ANSI C119.1-2016
American National Standard for Electric Connectors—Sealed Insulated Underground Connector Systems Rated 600 V
Covers sealed insulated underground connector systems rated at 600 V for utility applications and establishes electrical, mechanical and sealing requirements.
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ANSI C119.4-2016
American National Standard for Electric Connectors—Connectors for Use Between Aluminum-to-Aluminum and Aluminum-to-Copper Conductors Designed for Normal Operation at or Below 93°C and Copper-to-Copper
Covers connectors used to make electrical connections between aluminum-to-aluminum, aluminum-to-copper and copper-to-copper conductors on distribution and transmission lines. Establishes electrical and mechanical test requirements for electrical connectors.
$149
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ANSI C119.5-2018
American National Standard for Electric Connectors—Insulation-Piercing Connector Systems, Rated 600 V or Less (Low Voltage Aerial Bundled Cables and Insulated and Non-Insulated Line Wires)
Establishes the electrical, mechanical and environmental test requirements for electrical insulation-piercing connectors. Covers insulation-piercing connectors used for making electrical connections between insulated, insulated-to-bare and bare-to-bare conductors rated 600 V or less and 90°C (low voltage aerial bundled cables and bare and insulated line wires) on overhead distribution lines for electric utilities.
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ANSI C119.6-2018
American National Standard for Electric Connectors—Non-Sealed, Multiport Connector Systems Rated 600 V or Less for Aluminum and Copper Conductors
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ANSI/NEMA CC 1-2009 (R2015)
Electric Power Connectors for Substations
This standard covers uninsulated connectors and bus supports that are made of metal and intended for use with conductors or bus made of copper or aluminum alloy and found in substations. Connectors that are supplied in equipment are covered by the equipment standards and are excluded from this standard.
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<td>ANSI C37.50-2012</td>
<td>American National Standard for Switchgear—Low Voltage AC Power Circuit Breakers Used in Enclosures—Test Procedures</td>
<td>$0</td>
<td>Covers the test procedures for enclosed low voltage ac power circuit breakers as follows stationary or drawout circuit breakers of two- or three-pole construction; unfused or fused circuit breakers; and manually operated or power-operated circuit breakers with or without electromechanical or solid state trip devices.</td>
</tr>
<tr>
<td>ANSI C37.54-2002 (R2010)</td>
<td>American National Standard for Indoor AC High Voltage Circuit Breakers Applied as Removable Elements in Metal-Enclosed Switchgear—Conformance Test Procedures</td>
<td>$117</td>
<td>Specifies tests to demonstrate that the circuit breaker being tested conforms with the ratings assigned to it in accordance with ANSI/IEEE C37.04.</td>
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<tr>
<td>ANSI C37.58-2002 (R2010)</td>
<td>American National Standard for Switchgear—Indoor AC Medium Voltage Switches for Use in Metal-Enclosed Switchgear—Conformance Test Procedures</td>
<td>$84</td>
<td>Applies to conformance test procedures for ac medium voltage switches rated above 1,000 V as designed, tested and manufactured in accordance with ANSI/IEEE C37.20.4.</td>
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<tr>
<td>ANSI C37.85-2002 (R2010)</td>
<td>American National Standard for AC High Voltage Power Vacuum Interrupters—Safety Requirements for X-Radiation Limits</td>
<td>$83</td>
<td>Specifies the maximum permissible x-radiation emission from ac high voltage power vacuum interrupters that are intended to be operated at voltages above 1,000 V and up to 38,000 V when tested in accordance with procedures described in this standard.</td>
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<td>ANSI/NEMA AB 3-2013</td>
<td>Molded-Case Circuit Breakers and Their Application</td>
<td>$120</td>
<td>Covers molded-case circuit breakers and switches, assembled as integral units in supporting housings of insulating material, having voltage ratings up to and including 1,000 V ac and 1,200 V dc and interrupt ratings of 5,000 A or more.</td>
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<tr>
<td>ANSI/NEMA KS 2-2013</td>
<td>Distribution Equipment Switch Application Guide, A User’s Reference</td>
<td>$80</td>
<td>Contains instructions for the proper installation, operation and maintenance of distribution equipment switches rated 600 V or less.</td>
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<td>ANSI/NEMA PB 1.1-2013</td>
<td>General Instructions for Proper Installation, Operation and Maintenance of Panelboards Rated 600 V or Less</td>
<td>$56</td>
<td>Covers single panelboards or groups of panel units suitable for assembly in the form of single panelboards, including buses, with or without switches or automatic overload protective devices (fuses or circuit breakers), or both. Specifically excluded are live-front panelboards, panelboards employing cast enclosures for special service conditions, and panelboards designed primarily for residential and light commercial service equipment.</td>
</tr>
<tr>
<td>Publication</td>
<td>Title</td>
<td>Description</td>
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<tr>
<td>ANSI/NEMA PB 2.1-2013</td>
<td>General Instructions for Proper Handling, Installation, Operation and Maintenance of Deadfront Distribution Switchboards Rated 600 Volts or Less</td>
<td>Covers floor-mounted deadfront switchboards that consist of an enclosure, molded-case and low voltage power circuit breakers, fusible or non-fusible switches, instruments and metering, monitoring or control equipment, with associated interconnections and supporting structures. $50</td>
<td></td>
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<tr>
<td>NEMA ABP 2-2011</td>
<td>Recommendations on AFCI / Home Electrical Product Compatibility</td>
<td>Offers guidelines to designers of home electrical products for increasing compatibility with arc-fault circuit interrupters (AFCIs). Identifies conditions to help minimize the risk of undesired AFCI operation. $0</td>
<td></td>
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<tr>
<td>NEMA ABP 3-2013</td>
<td>Molded Case Circuit Breaker Systems Testing with Conductors</td>
<td>Protects rated conductors and insulated wire. The standard tests (as defined in UL 489) include overload and thermal tests, endurance followed by low level short circuit interrupting tests, and standard low level short circuit interrupting tests. $0</td>
<td></td>
</tr>
<tr>
<td>NEMA ABP 4-2013</td>
<td>Taking the Guesswork Out of Selecting and Maintaining Molded Case Circuit Breakers</td>
<td>Provides information to assist with answering various questions related to the application and maintenance of circuit breakers. $0</td>
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<tr>
<td>NEMA ABP 5-2015</td>
<td>Series Ratings</td>
<td>Shows why it is important to understand how the short circuit interrupting ratings are assigned to a combination of two or more overcurrent protective devices which are connected in series, and in which the rating of the downstream device(s) in the combination is less than the series rating. $0</td>
<td></td>
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<tr>
<td>NEMA ABP 6-2015</td>
<td>What is the Purpose of a Molded Case Circuit Breaker?</td>
<td>Discusses how molded case circuit breakers provide protection for conductors, and under what conditions they provide this protection. $0</td>
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<td>NEMA ABP 9-2015</td>
<td>Hazards of Working on Energized Electrical Equipment</td>
<td>Alerts electrical contractors, electricians, facility owners and managers, and other interested parties to some of the hazards of working on hot equipment and emphasizes the importance of turning off the power before working on electrical circuits. $0</td>
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<tr>
<td>NEMA ABP 10-2015</td>
<td>Arc Flash Analysis—Utility System Parameters Critical for Accurate PPE</td>
<td>Useful for industries using circuit protection in alternative energy, commercial, industrial, mining, and military applications, since it may be necessary to perform an arc-flash study to support an electrical safety program in the workplace. $0</td>
<td></td>
</tr>
<tr>
<td>NEMA ABP 11-2016</td>
<td>Compatibility between Smoke Alarms and Arc-Fault Circuit Interrupters</td>
<td>Explains that arc-fault circuit interrupters (AFCI) provide increased fire protection for the electrical installation. There is no evidence that the circuit supplying smoke alarms should be exempt from these increased protection requirements. Power supply reliability for smoke alarms is not impacted by the installation of an AFCI. $0</td>
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NEMA KS 1-2013
Heavy Duty Enclosed and Dead-Front Switches (600 Volts Maximum)
Covers manually operated enclosed and miscellaneous distribution equipment switches that are rated not more than 600 V and 6,000 A with or without a horsepower rating; with or without plug or cartridge fuses; with current-carrying parts and mechanisms enclosed in metallic/nonmetallic cases, or enclosed when mounted in enclosed switchboard or panelboard.
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NEMA KS 3-2010
Guidelines for Inspection and Preventive Maintenance of Switches Used in Commercial and Industrial Applications
Provides basic procedures for the inspection and preventive maintenance of switches used in commercial and industrial applications rated up to and including 600 V 50/60 Hz ac or ac/dc.
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NEMA PB 1-2011
Panelboards
Covers single panelboards or groups of panel units suitable for assembly in the form of single panelboards, including buses, and with or without switches or automatic overload protective devices (fuses or circuit breakers), or both.
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NEMA PB 1.1-2002 (en Espanol)
Instrucciones Generales para la Instalacion, Operacion y el Mantenimiento Correcto de Tableros de Alumbrado y Control Hasta 600 V Nominales o Menos
Esta norma es una guía de información práctica con instrucciones para la instalación, operación y mantenimiento correctos de tableros de alumbrado y control hasta 600 V nominales o menos.
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NEMA PB 2-2011
Deadfront Distribution Switchboards
Covers floor-mounted deadfront switchboards rated 6,000 A or less, 600 V or less that consist of an enclosure, molded-case circuit breakers, low voltage power circuit breakers, fusible or non-fusible switches, instruments, metering equipment, and monitoring or control equipment with associated interconnections and supporting structures.
$101

NEMA PB 2.1-2002 (en Espanol)
Instrucciones Generales para el Manejo, Instalacion, Operacion y Mantenimiento Correcto de Tableros de Distribucion de Frente Muerto Hasta 600 V Nominales o Menos
Esta norma de información práctica con instrucciones para el manejo, instalación, operación y mantenimiento correcto de tableros de distribución de frente muerto hasta 600 V nominales o menos.
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Contains instructions for the safe and proper application of GFP devices. GFP devices include current-sensing devices, relaying equipment or combinations of current-sensing devices and relaying equipment or other equivalent protective equipment that will operate to cause a disconnecting means to open all ungrounded conductors at predetermined values of ground-fault current and time.  
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**Guide to OSHA and NFPA 70E Safety Requirements When Servicing and Maintaining Medium-Voltage Switchgear, Circuit Breakers, and Medium-Voltage Controllers Rated above 1000 V**  
Enhances electrical safety awareness to mitigate electrical hazards for members of the workforce assigned to servicing and maintaining switchgear, owners and users of the equipment, and the public. The goal of this guide is to ensure the adoption of OSHA and NFPA 70E safety-related practices for electrical work and requirements of electrical safety.  
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**NEMA SG 11-2013**  
**Guide for Handling and Maintenance of AC Outdoor High Voltage Circuit Breakers**  
Provides information on receiving, storing, handling, installing, inspecting and maintaining ac outdoor high voltage circuit breakers.  
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Describes a protocol for authenticating electric vehicle (EV) charging service requests using contactless proximity radio frequency identification (RFID)-type credentials. Authentication provides assurance to the EV charging network that the EV driver is the correct authorized party incurring a financial or other obligation for the services to be rendered. The protocol also gives EV drivers confidence that transactions have not been authenticated using forged or fraudulent credentials.  
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<td>Position Paper on UL 1741 &amp; IEEE 1547, Particularly Addressing Regeneration</td>
<td>Explains when to use UL 1741 or IEEE 1547 in conjunction with the certification of an adjustable speed drive when the ASD has regeneration capability.</td>
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<td>NEMA IA 2.5-2005 Programmable Controllers (PLC), Part 5 Communications</td>
<td>Specifies communication aspects of a PLC. This standards publication is a NEMA Adoptive Standard based on Part 5 of IEC 61131.</td>
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<td>NEMA IA 2.7-2005 Programmable Controllers (PLC), Part 7 Fuzzy Control Programming</td>
<td>Defines a language for the programming of fuzzy control applications used by PLC. This standards publication is a NEMA Adoptive Standard based on Part 7 of IEC 61131.</td>
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<td>NEMA IA 2.8-2005 Programmable Controllers (PLC), Part 8 Guidelines for the Application and Implementation of Programming Languages</td>
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<td>NEMA ICS 1.3-1986 (R2001, R2009, R2015) Preventive Maintenance of Industrial Control and Systems Equipment</td>
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<td>NEMA ICS 2-2000 (R2005) Controllers, Contactors and Overload Relays Rated 600 V</td>
<td>Provides general requirements for manual and magnetic controllers. Covers requirements for magnetic and non-magnetic motor controllers, overload relays and magnetic lighting contactors.</td>
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<td>NEMA ICS 2-2002, Part 9 (R2007, R2013) AC Vacuum-Break Magnetic Controllers Rated 1,500 V AC</td>
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<td>Contains instructions for the handling, installation and maintenance of motor control centers rated 600 V or less.</td>
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<td>NEMA and IEC Devices for Motor Service—A Guide for Understanding the Differences</td>
<td>Identifies features, conventions, characteristics and attributes of magnetic contactors and thermal overload relays. Control products compared or contrasted in this guide are those with equivalent electrical ratings; such ratings are expressed via nameplates, catalogues or technical literature.</td>
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<td>NEMA ICS 3-2005 (R2010)</td>
<td>Medium Voltage Controllers Rated 2,001 to 7,200 V AC</td>
<td>Applies to ac general-purpose contactors and Class E magnetic controllers rated 2001 to 7200 V, three-phase, 50 and 60 Hz.</td>
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<td>NEMA ICS 3.1-2009 (R2014)</td>
<td>Guide for the Application, Handling, Storage, Installation and Maintenance of Medium Voltage AC Contactors, Controllers and Control Centers</td>
<td>Contains practical information for architects, electrical engineers, contractors and maintenance personnel on the handling, storage and installation of ac general-purpose medium voltage contactors and Class E controllers.</td>
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<td>NEMA ICS 4-2015</td>
<td>Application Guideline for Terminal Blocks</td>
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<td>Control Circuit and Pilot Devices</td>
<td>Provides general requirements, classifications, installation, maintenance, testing and application information for control circuit and pilot devices. Covers the requirements for control relays, limit switches, proximity switches, pushbuttons, selector switches, indicating and pushbutton stations.</td>
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<td>Covers enclosure requirements of all industrial control devices functioning on commercial voltages of up to 750 V DC or up to 7,200 V AC. Includes information concerning ratings, construction, testing, performance and manufacture.</td>
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<td>NEMA ICS 6-2018</td>
<td>Adjustable Speed Drives</td>
<td>Provides practical information concerning ratings, construction, test, performance and manufacture of industrial control equipment—adjustable speed drives. Parts 4, 5, 6 and 7 are vacant. Parts 4 and 6 of ICS 7-2000 have been replaced by ICS 61800-2-2005. Part 5 has been replaced by ICS 61800-1-2002. Part 7 of ICS 7-2000 has been replaced by ICS 61800-4.</td>
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<td>NEMA ICS 7.1-2014</td>
<td>Safety Standards for Construction and Guide for Selection, Installation and Operation of Adjustable Speed Drive Systems</td>
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Guide to Application of Low-voltage Automatic Transfer Switch Equipment
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NEMA ICS 12.1-1997
Industrial Control and Systems Profiles of Networked Industrial Devices—Part 1 General Rules
Provides general rules and definitions for the development of profiles for networked industrial devices. The profile terms, structure, format and data interchange standardized in this publication serve to aid in the common description and understanding of these devices.
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Application Guide for Electric Fire Pump Controllers
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Instructions for the Handling, Installation, Operation and Maintenance of Electric Fire Pump Controllers Rated Not More Than 600 V
Facilitates movement, handling, installation, and maintenance of electric fire pump controllers at the job site. This helps avoid personal injury and equipment damage during these processes.
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NEMA ICS 15.1-2012
Instructions for the Handling, Installation, Operation, and Maintenance of Medium Voltage Electric Fire Pump Controllers Rated Not More Than 7200 V
Provides to facilitate movement, handling, installation, and maintenance of medium voltage fire pump controllers at the job site and to help avoid personal injury and equipment damage during these processes. Information includes handling, storage installation of conduits, cables, and wires, pre-energization and energization, care and maintenance, and required field marking.
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NEMA ICS 15.1-2012
Instructions for the Handling, Installation, Operation, and Maintenance of Medium Voltage Electric Fire Pump Controllers Rated Not More Than 7200 V
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NEMA ICS 16-2001
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Covers rotational electric servo and stepper motors and their power requirements, feedback devices and controls intended for use in a motion/position control system that provides precise positioning, speed control, torque control or any combination thereof.
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Motor Control Centers
Applies to three-phase 50 and 60 Hz motor control centers rated not more than 600 V ac.
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Diagrams, Device Designations and Symbols
Provides guidelines for representation of devices on diagrams and drawings in a standardized manner.
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Programmable Controllers (PLC), Part 1: General Information
Applies to PLC and their associated peripherals, such as programming and debugging tools and human-machine interfaces, which have as their intended use the control and command of machines and industrial processes.
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NEMA ICS 61131-4-2005 (R2013) (Formerly NEMA IA 2.4-2005)
Programmable Controllers, Part 4: User Guidelines
Assists end users in selection and specification of PLC equipment.
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NEMA ICS 61800-1-2002 (R2007)
Applies to general purpose adjustable speed dc drive systems that include the power conversion, control equipment and a motor or motors. Excluded are traction and electrical vehicle drives.
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### NEMA ICS 61800-2-2005
Applies to general purpose adjustable speed ac drive systems that include power conversion, control equipment and an ac motor or motors. Excluded are traction and electrical vehicle drives. Applies to systems connected to line voltages up to 1 kV ac, 50 or 60 Hz, and load side frequency up to 600 Hz.
$184

### NEMA ICS 61800-4-2004
Adjustable Speed Electrical Power Drive Systems, Part 4: General Requirements—Rating Specifications for AC Power Drive Systems Above 1,000 V AC and Not Exceeding 35 kV
Applies to power drive systems with converter voltages (line-to-line voltage), between 1 kV ac and 35 kV ac, input side 50 or 60 Hz, and load side frequencies up to 600 Hz.
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### NEMA ICS 61800-6 TR-2015
Adjustable Speed Electrical Power Drive Systems, Part 6: Guide for Determination of Types of Load Duty and Corresponding Current Ratings
Explains how to determine the types of load duty and related current ratings for an adjustable speed drive. Also provides clarification to users for application of NEMA member products for industries such as heating and air-conditioning, industrial automation and machinery.
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### PMC 1-2004
Programmable Motion Control Handbook
 Provides a complete resource guide to motion control technology, products and applications compiled by leading vendors and developers of motion control technology.
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#### NEMA IIC 1 v02
Digital Imaging and Communications in Security Information Object Definitions (IODs)
Provides a data interchange protocol and interoperable, extensible file format to facilitate data information interchange (demographic information, x-ray radiographs, CT images, material specific information, trace detection signatures, threat assessment, etc.) of objects of inspection (checked luggage, carry-on luggage, parcels, personnel, etc.) for security screening applications.

### Insulating Products

#### ANSI/NEMA C29.1-2018
American National Standard for Electrical Power Insulators—Test Methods
Comprises a manual of test methods to be followed in making tests to determine the characteristics of electrical power insulators.
$76

#### ANSI/NEMA C29.2A-2013
American National Standard for Insulators Wet Process Porcelain and Toughened Glass—Distribution Suspension Type
Covers distribution suspension-type insulators, 4-1/4 inches (108 millimeters) to 8 inches (203 millimeters) in diameter, made of wet-process porcelain or of toughened glass and used in the distribution of electrical energy.
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#### ANSI/NEMA C29.2B-2013
American National Standard for Insulators-Wet Process Porcelain and Toughened Glass—Transmission Suspension Type
Covers transmission suspension-type insulators, 9 inches (228.6 millimeters) in diameter and larger, made of wet-process porcelain or of toughened glass and used in the transmission of electrical energy.
$75

#### ANSI/NEMA C29.3-2015
American National Standard for Wet-Process Porcelain Insulators—Spool Type
Covers spool-type insulators made of wet-process porcelain.
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#### ANSI/NEMA C29.4-2015
American National Standard for Wet-Process Porcelain Insulators—Strain Type
Covers specifications on materials and dimensions, as well as tests on materials and measurement of flashover value.
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#### ANSI/NEMA C29.5-2015
American National Standard for Wet-Process Porcelain Insulators—Low and Medium Voltage Types
Covers materials, dimensions and characteristics, marking, sampling, inspecting and testing of wet-process porcelain insulators (low and medium voltage types).
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#### ANSI/NEMA C29.6-2015
American National Standard for Wet-Process Porcelain Insulators—High Voltage Pin Type
Covers materials, dimensions, physical characteristics and testing information for high voltage pin insulators made of wet-process porcelain.
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ANSI/NEMA C29.7-2015
American National Standard for Wet-Process Porcelain Insulators—High-Voltage Line-Post Type
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ANSI/NEMA C29.8-2017
American National Standard for Wet-Process Porcelain Insulators—Apparatus, Cap and Pin Type
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ANSI/NEMA C29.9-2017
American National Standard for Wet-Process Porcelain Insulators—Apparatus, Post Type
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ANSI/NEMA C29.10-2017
American National Standard for Wet-Process Porcelain Insulators—Indoor Apparatus Type
Specifies the material, dimensions and performance requirements for indoor apparatus wet-process porcelain insulators. Includes requirements for testing thermal and mechanical strength, impulse and dew-withstand values, flashover value, porosity and, when galvanized hardware is used, coating thickness.
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ANSI/NEMA C29.11-2012
American National Standard for Composite Insulators—Tests Methods
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ANSI/NEMA C29.13-2012
American National Standard for Insulators—Composite—Distribution Deadend Type
Covers composite distribution deadend insulators made of a fiberglass-reinforced resin matrix core, polymer material weathersheds and metal end fittings intended for use on overhead lines for electric power systems, 69 kV and below. Mechanical and electrical performance levels specified are requirements for new insulators.
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ANSI/NEMA C29.17-2013
American National Standard for Composite Insulators—Transmission Line Post Type
Describes the qualification test procedures for composite line post insulators that are made of a fiberglass-reinforced resin matrix core, elastomeric weathersheds and metal end fittings.  $79

ANSI/NEMA C29.18-2013
American National Standard for Composite Insulators—Distribution Line Post Type
Covers composite distribution line post insulators made of a fiberglass-reinforced resin matrix core, elastomeric material weathersheds and metal end fittings designed for use on overhead lines for electric power systems, 69 kV and below.
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Manufactured Electrical Mica
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Calendered Aramid Papers Used for Electrical Insulation
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Methods of Measurement of Radio Influence Voltage (RIV) of High Voltage Apparatus
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Untreated Mica Paper Used for Electrical Insulation
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NEMA HV 2-2014
Suspension and Post Type Insulators for Electric Power Overhead Lines General Use Information
Provides guidelines for the proper application of ceramic (porcelain and toughened glass) suspension insulators.
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Industrial Laminated Thermosetting Products
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American National Standard for Electric Lamps—PAR and R Shapes
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### ANSI C78.22-1995 (R2003)
American National Standard for Incandescent Lamps—A, G, PS and Similar Shapes with E39 Mogul Screw Bases
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### ANSI C78.23-1995 (R2003)
American National Standard for Incandescent Lamps—Miscellaneous Types
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American National Standard for 2 in. (51 mm) Integral-Reflector Lamps with Front Covers and GU5.3 or GX5.3 Bases
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### ANSI C78.30-1997 (S2018)
American National Standard for Electric Lamps—Procedure for Use in Preparation of Lamp Space Drawings
Describes the procedure for construction of lamp space drawings. $66

### ANSI C78.40-2016
American National Standard for Electric Lamps—Specifications for Mercury Lamps
Sets forth the physical and electrical requirements for single-ended metal halide lamps operated on 60 Hz ballasts to ensure interchangeability and safety. $303

### ANSI C78.41-2016
American National Standard for Electric Lamps—Guidelines for Low-Pressure Sodium (LPS) Lamps
Describes the physical and electrical requirements of the principal types of single-ended LPS lamps. The electrical data provides the specific basis for ballast requirements for these lamps. $129
| ANSI C78.42-2009 (R2016) | American National Standard for Electric Lamps—High-Pressure Sodium (HPS) Lamps | Sets forth the physical and electrical requirements for HPS lamps to ensure performance and interchangeability. Also provides the basis for the electrical requirements for ballasts and ignitors, as well as the lamp-related requirements for luminaires. | $555 | Buy Now |
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| ANSI C78.45-2016 | American National Standard for Electric Lamps—Self-Ballasted Mercury Lamps | Sets forth the physical and electrical requirements for self-ballasted mercury lamps operated on 60 Hz supply lines to ensure interchangeability and safety. Also provides the lamp-related requirements for luminaires. Luminous flux and lamp color are not part of this standard. | $155 | Buy Now |
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ANSI C78.370-1997 (R2003)
American National Standard for Method of Designation for Electric Lamps—Photographic, Stage and Studio
Describes a system for the designation of photographic, stage and studio lamps.
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ANSI C78.370.390-2002
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ANSI C78.374-2015
American National Standard for Electric Lamps—Light-Emitting Diode Package Specification Sheet for General Illumination Applications
Specifies the standardized white light-emitting diode (LED) package specification sheet, or data reporting format, as the means of communication between LED package producers and users in general illumination applications. The minimum defined contents and format of the specification sheet are provided.
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ANSI C78.375A-2014
American National Standard for Electric Lamps—Fluorescent Lamps—Guide for Electrical Measures
Describes the procedures to be followed and the precautions to be observed in obtaining uniform and reproducible measurements of the electrical characteristics of fluorescent lamps under standard conditions when operated on alternating current (ac) circuits. These methods are applicable both to lamps having hot cathodes—switch-start (preheat-start), rapid-start (continuously heated cathodes), or instant-start—and to lamps of the cold-cathode variety.
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ANSI C78.376-2014
American National Standard for Electric Lamps—Specifications for the Chromaticity of Fluorescent Lamps
Covers the objectives and tolerances for the chromaticity of fluorescent lamps at their normal 100 hour rating point. The colors included are 2700K, 3000 K/warm white, 3500K/warm white, 4000K/4100K/cool white, 5000K, and 6500K/daylight.
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ANSI C78.377-2017
American National Standard for Electric Lamps—Specifications for the Chromaticity of Solid State Lighting (SSL) Products
Specifies the range of chromaticities recommended for general lighting with SSL products and ensures that the white light chromaticities of the products can be communicated to consumers. Applies to LED-based SSL products with control electronics and heat sinks incorporated.
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ANSI C78.379-2006 (R2015)
American National Standard for Electric Lamps—Classification of the Beam Patterns of Reflector Lamps
Describes a system for classification of beam patterns and beam angles of reflector lamps and defines a method of describing light output.
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ANSI C78.380-2016
American National Standard for Electric Lamps—High-Intensity Discharge (HID)—Method of Designation
Describes a system for the designation of high-intensity discharge lamps, including compact, enclosed-arc discharge light sources such as mercury, metal halide, high-pressure sodium, and similar types of lamps. For convenience, low-pressure sodium lamps, although technically not high-intensity discharge lamps, are included with the group.
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ANSI C78.381-1961 (R2011, S2016)
American National Standard for Electric Lamps—Method for the Designation of Glow Lamps
Describes a designation system for glow lamps.
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ANSI C78.1406-2004
American National Standard for Electric Lamps—P28 Single-Contact Medium Prefocus-Based Projection Lamps for Base-Down Operation—Dimensions
Establishes the dimensions essential to interchangeability of single-contact medium prefocus-based projection lamps of T10 and T12 bulb sizes. $47

ANSI C78.1408-2004 (R2008, R2015)
American National Standard for Electric Lamps—CBA Projection Lamp
Provides information on the description, ratings, restrictions, physical characteristics, dimensions, life, illumination, seal temperature and operating temperature of a lamp that has been Lamp Code Designated as a CBA projection lamp. $51

ANSI C78.1413-2001
American National Standard for Dimensions and Centering Systems for Projection Lamps—51 mm (2 in.) Integral Reflector, Rim Reference Lamps with GX5.3, GY5.3 and GU5.3 Bases
Specifies detailed dimensions for 51 mm (2 in.) integral reflector rim reference projection lamps with GX5.3, GY5.3 or GU5.3 bases to ensure interchangeability within the appropriate holding systems. The lamps provide references for mounting at their reflector rims. $96

ANSI C78.1417-1997
American National Standard for 1.65 in. (42 mm) Integral Reflector, Rim Reference Projection Lamps with GX5.3 or GY5.3 Bases—Dimensions and Centering Systems
Specifies the detailed lamp dimensions for those lamps in the family of 1.65 in. (42 mm) integral reflector, rim reference lamps with GX5.3 or GY5.3 bases such that interchangeability within the appropriate holding system will be ensured. $65

ANSI C78.1420-2001
American National Standard for Microfilm Projection Lamps—2 in. (51 mm) Dichroic Coated Integral Reflector, Rim Reference Tungsten Halogen Lamps with GX5.3 Bases
Consolidates the lamps commonly used for microfilm projectors into a single performance standard. $111

ANSI C78.1431-1997 (R2016)
American National Standard for Electric Lamps—Slide Projector Lamps, Condensing, Dichroic, Two-inch (51 mm), Integral Reflector, Rim Reference Tungsten-Halogen Lamps with GY 5.3 Bases
Consolidates the lamps commonly used for slide projectors into a single standard. The lamps contained in this standard are not to be considered as interchangeable—they will all fit the common socket used for these lamps. $66
ANSI C78.1432-1997 (S2018)
American National Standard for Tungsten Halogen (TH) Lamps with GZ9.5 Two-Pin, Prefocus Bases and 36.5 mm Nominal Light Center Length Definitions the dimensional limits and other physical characteristics required to ensure commonality and interchangeability and to assist in the proper application of TH lamps. $50

ANSI C78.1433-2001 (S2018)
American National Standard for 2 in. (51 mm) Dichroic Coated Integral Reflector, Rim Reference Tungsten Halogen (TH) Large-Screen Projection Lamps with GX5.3 Bases Consolidates standards for low voltage 2 in. (51 mm) dichroic coated integral reflector, rim reference TH lamp types with GX5.3 bases designed for large-screen projection systems and used in 8 mm and 16 mm projection, slide projector, photo enlarger and printing applications. $90

ANSI C78.1434-2001 (S2018)
American National Standard for Condensing Dichroic Coated Integral Reflector Side-Pin Tungsten Halogen (TH) Projection Lamps with GX7.9 Bases Consolidates previous standards for certain low voltage condensing dichroic coated integral reflector side-pin TH projection lamps with GX7.9 bases designed for large-screen projection systems and used in 8 mm and 16 mm projector applications. $125

ANSI C78.1435-2002 (S2018)
American National Standard for Projection Lamps—Tungsten Halogen Lamps with G5.3 Bases Consolidates projection lamps with G5.3 bases into a single standard. $61

ANSI C78.1450-1983 (R2002)
American National Standard for Projection Lamps, Incandescent—Method for Life Testing Defines the dimensional limits and other physical characteristics required to ensure commonality and interchangeability and to assist in the proper application of projection lamps. $43

ANSI C78.1451-2002 (S2018)
American National Standard for Electric Lamps—Use of Protective Shields with Tungsten Halogen (TH) Lamps—Cautionary Notice Applies to the use of protective shields with all TH lamps that do not have an integral device that protects against shattering and ultraviolet emissions. $9

ANSI C78.1452-2004 (R2008, R2015)
American National Standard for Electric Lamps—Projection Lamps—Vocabulary Provides definitions for a wide range of terms used in the design, manufacturing and application of photographic lamps. Serves as a common reference for all lamp standards in the C78.1400 series, thus reducing the number of terms that need to be defined in individual standards. $175

ANSI C78.1450-1997 (S2018)
American National Standard for Electric Lamps—Single-Ended Tungsten-Halogen Lamps GZ9.5 Base, T6 Bulb, 36.5mm LCL, 76.2mm MOL with Proximity Reflector This standard defines the dimensional, physical, and other characteristics to assist in the proper application of tungsten-halogen lamps with GZ9.5 bases, T6 (T19) bulbs at 36.5 mm LCL and 76.2 mm maximum overall length with internal proximity reflectors. Lamps of various wattage and voltage designs are included. $59

ANSI C78.1500-2001
American National Standard for Tungsten Halogen (TH) Lamps with a Light Center Length (LCL) of 89 mm (3½ in.) Defines the dimensional limits and other physical characteristics required to ensure interchangeability and assist in the proper application of TH lamps with P28 bases and 89 mm nominal LCL. $105

ANSI C78.1501-2016
American National Standard for Electric Lamps—Tungsten-Halogen Lamps with G22 Bases and 63.5 mm LCL Defines the dimensional limits and other physical characteristics required to ensure interchangeability and assist in the proper application of TH lamps with G22 bases and 63.5 mm nominal LCL. $105

ANSI C78.1503-2001
American National Standard for Tungsten Halogen (TH) Lamps with G9.5 Bases and 60.5 mm Light Center Length (LCL) Defines the dimensional limits and other physical characteristics required to ensure interchangeability and assist in the proper application of TH lamps with G9.5 bases and 60.5 mm nominal LCL. $86
ANSI C78.1504-2001
American National Standard for Tungsten Halogen (TH) Lamps with P28 Bases and 55.5 mm Light Center Length (LCL)
Defines the dimensional limits and other physical characteristics required to ensure interchangeability and assist in the proper application of TH lamps with P28 bases and 55.5 mm nominal LCL.
$51

ANSI C78.1505-2001
American National Standard for Tungsten Halogen (TH) Lamps with G38 Bases and 127 mm Light Center Length (LCL)
Defines the dimensional limits and other physical characteristics required to ensure interchangeability and assist in the proper application of TH lamps with G38 bases and 127 mm nominal LCL.
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ANSI C78.60360-2002 (S2016)
Describes the standard method of measurement of lamp cap temperature rise which is used when testing incandescent or discharge lamps for compliance with the limits. Temperature-rise limits for particular lamp types are listed in IEC 60432.
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ANSI C78.60432:1-2007
Covers tungsten filament lamps for domestic and similar general lighting purposes.
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ANSI C78.60432.2-2007 (S2018)
Covers TH lamps for domestic and similar general lighting purposes.
$50

ANSI C78.62612-2018
American National Standard for Electric Lamps—Self-Ballasted LED Lamps—Performance Specifications
Specifies the performance requirements, together with the test methods and conditions, required to show compliance of LED lamps with integral means for stable operation, intended for domestic and similar general lighting purposes.
$53

ANSI C78.62717-2018
American National Standard for Electric Lamps—LED Modules for General Lighting—Performance Requirements
Specifies the performance requirements for LED modules, together with the test methods and conditions, required to show compliance with this standard.
$53

ANSI C78.62035-2016
American National Standard for Electric Lamps—Discharge Lamps (Excluding Fluorescent Lamps)—Safety Specifications
This standard sets forth safety specifications for discharge lamps (excluding fluorescent lamps) with deviations to IEC 62035 (2014-04) Ed. 2.0.
$56

American National Standard for Electric Lamps—Procedures for High Intensity Discharge Lamp Sample Preparation and the Toxicity Characteristic Leaching Procedure
Procedures for preparation of high-intensity discharge (HID) lamps for the Toxicity Characteristic Leaching Procedure (TCLP) are presented. These procedures are intended to supplement the TCLP by supplying specific instructions for size reduction and for other critical procedures specific to the testing of HID lamps.
$59

American National Standard for Electric Lamps—Procedures for Fluorescent Lamp Sample Preparation and the Toxicity Characteristic Leaching Procedure
Procedures for preparation of fluorescent lamps for Toxicity Characteristic Leaching Procedure (TCLP) are presented. These guidelines are intended to supplement the TCLP by supplying specific instructions for size reduction of lamps including integral electronic compact, pin-based compact, linear and U-shaped fluorescent lamps.
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ANSI C81.61-2017
American National Standard for Electrical Lamp Bases—Specifications for Bases (Caps) for Electric Lamps
Sets forth the specifications for bases (caps) used on electric lamps. This revision includes specifications for the G6.6 base.
$570

ANSI C81.62-2017
American National Standard for Electric Lampholders
Sets forth the specifications for lampholders for electric lamps. This revision includes specifications for the G6.6 lampholder.
$419

ANSI C81.63-2007 (R2014)
American National Standard for Gauges for Electric Lamp Bases and Lampholders
Standard sets forth the specifications for gauges for bases (caps) and lampholders for electric lamps.
$686

ANSI C81.64-2005 (R2014)
American National Standard—Guidelines and General Information for Electrical Lamp Bases, Lampholders and Gauges
Provides guidance and information to designers and testing personnel on the use of ANSI/IEC C81.61, ANSI/IEC C81.62 and ANSI/IEC C81.63 and their supplements.
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ANSI C82.2-2002
American National Standard for Lamp Ballasts—Method of Measurement of Fluorescent Lamp Ballasts
Outlines the procedures and the precautions to be observed in measuring and testing line frequency fluorescent lamp ballasts as specified in C82.1 with either hot- or cold-cathode fluorescent lamps.
$162

ANSI C82.3-2016
American National Standard for Reference Ballasts for Fluorescent Lamps
Describes the essential design features and operating characteristics of reference ballasts for fluorescent lamps.
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ANSI C82.4-2017
American National Standard for Lamp Ballasts—Ballasts for High-Intensity Discharge and Low-Pressure Sodium (LPS) Lamps (Multiple-Supply Type)
Provides specifications for and operating characteristics of ballasts for mercury, metal halide, high-pressure sodium and LPS lamps. The ballasts operate from multiple-supply sources of 600 V maximum at a frequency of 60 Hz.
$162

ANSI C82.6-2015
American National Standard for Lamp Ballasts—Ballasts for High-Intensity Discharge (HID) Lamps—Methods of Measurement
Describes the procedures to be followed and the precautions to be taken in measuring performance of low-frequency ballasts (electromagnetic and electronic ballasts that operate at less than 400 Hz) for high-intensity discharge (HID) lamps.
$328

ANSI C82.9-2016
American National Standard for Lamp Ballasts—High-Intensity Discharge (HID) and Low-Pressure Sodium (LPS) Lamps—Definitions
Provides definitions relative to specific terms contained in HID and LPS lamps and ballast standards. Covers the dimensional limits and other physical characteristics required to ensure the commonality, interchangeability and proper application of these lamps.
$116

ANSI C82.11-2017
American National Standard for Lamp Ballasts—High Frequency Fluorescent Lamp Ballasts
Covers high frequency ballasts that have rated open-circuit voltages of 2,000 V or less and are intended to operate at a supply frequency of 50 or 60 Hz.
$463

ANSI C82.13-2002
American National Standard for Lamp Ballasts—Definitions—for Fluorescent Lamps and Ballasts
Provides definitions of terms used in ANSI C78 and C82 series standards for fluorescent lamps and ballasts. Individual standards may also include additional definitions specific to that standard.
$82

ANSI C82.14-2016
American National Standard for Lamp Ballasts—Low-Frequency Square Wave Electronic Ballasts—for Metal Halide Lamps
Provides specifications for and operating characteristics of low-frequency square wave electronic ballasts for metal halide lamps. Covers lamp operating-current frequencies from greater than 60 Hz up to 400 Hz (some exclusionary frequency ranges may apply).
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<thead>
<tr>
<th><strong>ANSI C82.77-10-2014</strong></th>
<th>American National Standard for Lighting Equipment—Harmonic Emission Limits—Related Power Quality Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Specifies harmonic limits, their methods of measurement, and power factor (PF) 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.</td>
</tr>
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<td>$85 (Buy Now)</td>
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<table>
<thead>
<tr>
<th><strong>ANSI C82.77-2002</strong></th>
<th>American National Standard for Harmonic Emission Limits—Related Power Quality Requirements for Lighting Equipment</th>
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<tbody>
<tr>
<td></td>
<td>Specifies harmonic limits and methods of measurement for lighting equipment.</td>
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<td></td>
<td>Provides a guide for the proper selection of filament lamps for use in roadway and area lighting equipment covered by the following standards ANSI C136.4, ANSI C136.5, ANSI C136.6 and ANSI C136.11.</td>
</tr>
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<thead>
<tr>
<th><strong>ANSI C136.2-2018</strong></th>
<th>American National Standard for Roadway and Area Lighting Equipment—Dielectric Withstand and Electrical Transient Immunity Requirements</th>
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<tbody>
<tr>
<td></td>
<td>This standard covers luminaires and control devices classified for up to 600 V operation and intended for use in roadway and area lighting applications. It contains minimum performance requirements and test procedures for evaluating luminaire and control devices under test (DUTs) for dielectric withstand and electrical transient immunity.</td>
</tr>
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<td>$46 (Buy Now)</td>
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<thead>
<tr>
<th><strong>ANSI C136.3-2014</strong></th>
<th>American National Standard for Roadway and Area Lighting Equipment—Luminaire Attachments</th>
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<tbody>
<tr>
<td></td>
<td>Covers attachment features of luminaires used in roadway and area lighting equipment. The features covered apply to luminaires that are side-, post top– or pendant-mounted.</td>
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<td>Covers series sockets having medium-impact strength and intended for service at high temperatures, series sockets having high-impact strength and intended for service at limited temperatures, and series-socket receptacles in the 5,000 V classification.</td>
</tr>
<tr>
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<td>$66 (Buy Now)</td>
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<tr>
<th><strong>ANSI C136.48-2018</strong></th>
<th>American National Standard For Roadway and Area Lighting Equipment—Wireless Networked Lighting Controllers</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Defines the minimum requirements for wireless networked lighting controllers (NLC) intended for use with roadway and area lighting systems.</td>
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<tr>
<th><strong>ANSI C136.5-2003 (R2013)</strong></th>
<th>American National Standard for Roadway and Area Lighting Equipment—Film Cutouts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Covers operating and dimensional features of single-shot film cutouts used with series roadway lighting equipment and circuits that function by dielectric breakdown and subsequent partial fusing of components to establish a shunting electrical circuit to bypass non-operative series roadway lighting equipment.</td>
</tr>
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<tbody>
<tr>
<td></td>
<td>Covers dimensional features of luminaires with metal heads that permit mechanical and optical interchangeability of head and reflector assemblies.</td>
</tr>
<tr>
<td></td>
<td>$46 (Buy Now)</td>
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</tbody>
</table>
ANSI C136.9-2003 (R2012, R2018)
American National Standard for Roadway and Area Lighting Equipment—Socket Support Assemblies for Metal Heads—Mechanical Interchangeability
Covers the following equipment for use in metal heads that are in accordance with the latest revision of C136.6 high-intensity discharge lamp ballast and socket assemblies, and mogul and medium multiple incandescent lamp socket and support assemblies.
$46

ANSI C136.10-2017
American National Standard for Roadway and Area Lighting Equipment—Locking-Type Photocontrol Devices and Mating Receptacles—Physical and Electrical Interchangeability and Testing
Covers the following roadway and area lighting equipment, which may be physically and electrically interchanged to operate within established values locking-type photocontrol; locking-type mating receptacle; and shorting and non-shorting caps.
$72

ANSI C136.11-2011 (R2016)
American National Standard for Roadway and Area Lighting Equipment—Multiple Sockets
Discusses medium and mogul screw base sockets used in multiple fixture circuits or in luminaires designed and intended for parallel wired circuits. Provides interchangeability of lamps, minimum safety standards for operating personnel, and minimum performance criteria in lighting roadways and areas open to the public.
$46

ANSI C136.12-2014
Covers the selection of mercury vapor lamps recommended for use in roadway and area lighting equipment.
$46

ANSI C136.13-2014
American National Standard for Roadway and Area Lighting Equipment—Metal Brackets for Wood Poles
Covers metal pipe, tubing and structural brackets for wood poles designed to support luminaires of generally spherical, ellipsoidal or rectangular shapes used in roadway and area lighting.
$64

ANSI C136.14-2014
Covers dimensional, maintenance and light distribution features that permit the interchange of enclosed side-mounted luminaires for horizontal-burning high-intensity discharge (HID) lamps and other light sources used in roadway and area lighting equipment.
$46

ANSI C136.15-2015
American National Standard for Roadway and Area Lighting Equipment—Luminaire Field Identification
The intent of this standard is to provide a simple, uniform method for identifying the type and wattage rating of a luminaire used for roadway and area lighting.
$46

ANSI C136.16-2014
American National Standard for Roadway and Area Lighting Equipment—Enclosed, Post Top–Mounted Luminaires
Covers dimensional, maintenance, and light distribution features that permit the interchange of enclosed, post top–mounted high-intensity discharge (HID), solid state light (SSL) source (also referred to as LED (Light Emitting Diode), compact fluorescent, and induction luminaires whose center of mass is approximately over the mounting tenon.
$46

American National Standard for Roadway and Area Lighting Equipment—Enclosed Side-Mounted Luminaires for Horizontal-Burning High-Intensity Discharge Lamps—Mechanical Interchangeability of Refractors
Covers the dimensional features and the materials of refractors as shown in this standard and as described in C136.14.
$61

ANSI C136.18-2018
American National Standard for Roadway and Area Lighting Equipment—High-Mast Side-Mounted Luminaires for Horizontal- or Vertical-Burning High-Intensity Discharge Lamps
Covers physical, operational, maintenance and light-distribution features that permit use of high-mast luminaires in roadway applications when specified.
$43

ANSI C136.19-2017
American National Standard for Roadway and Area Lighting Equipment—High-Pressure Sodium (HPS) and Retrofit HPS Lamps for Mercury Ballasts—Guide for Selection
Covers the selection of HPS lamps recommended for use in roadway and area lighting equipment.
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$35,424
ANSI C136.20-2012
American National Standard for Roadway and Area Lighting Equipment—Fiber-Reinforced Composite (FRC) Lighting Poles
Applies to FRC lighting poles used for roadway and area lighting. Includes nomenclature, dimensional data, performance criteria and some interchangeability features for standard poles as well as those that must meet breakaway requirements for poles as described in AASHTO LTS Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.
$61
Buy Now

ANSI C136.21-2014
American National Standard for Roadway and Area Lighting Equipment—Vertical Tenons Used with Post Top–Mounted Luminaires
Covers the attachment features of vertical tenons on pole tops or brackets used in roadway and area lighting that permit the interchangeability of post top–mounted luminaires.
$46
Buy Now

ANSI C136.22-2004 (R2009, R2014)
American National Standard for Roadway and Area Lighting Equipment—Internal Labeling of Luminaires
Covers internal luminaire identification labels for all styles of luminaires used for roadway lighting.
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Buy Now

ANSI C136.23-2012
American National Standard for Roadway and Area Lighting Equipment—Enclosed Architectural Luminaires
Covers physical, operating, maintenance and light-distribution features that permit use of architectural luminaires in roadway applications.
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ANSI C136.24-2004 (R2010)
American National Standard for Roadway and Area Lighting Equipment—Non-Locking (Button)–Type Photocontrols
Covers the electrical and mechanical interchangeability of non-locking–type photocontrols for mounting within a roadway or off-roadway luminaire.
$64
Buy Now

ANSI C136.25-2013
American National Standard for Roadway and Area Lighting Equipment—Ingress Protection (Resistance to Dust, Solid Objects and Moisture) for Luminaire Enclosures
Addresses the protection of luminaires from ingress based on the anticipated environment.
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Buy Now

ANSI C136.26-2010 (R2015)
Offers step-by-step guidance for use in troubleshooting HID lighting fixtures by technicians in the field.
$43
Buy Now

ANSI C136.27-2012
American National Standard for Roadway and Area Lighting Equipment—Tunnel Lighting and Underpass Luminaires
Covers luminaires used for illuminating roadway tunnels and underpasses. The requirements in this standard are limited to general attributes of tunnel luminaires because of the wide variety of possible designs.
$61
Buy Now

ANSI C136.28-2006 (R2011, S2017)
American National Standard for Roadway and Area Lighting Equipment—Glass Lenses Used in Luminaires
Covers flat and molded glass of soda-lime and borosilicate materials used as lenses for roadway and area lighting luminaires. Includes definitions, criteria and test methods for mechanical and impact strength, thermal shock resistance and temper for both materials.
$61
Buy Now

ANSI C136.29-2011 (R2018)
Includes information on screw base single-ended metal halide lamps that can be used in roadway and area lighting equipment.
$46
Buy Now

ANSI C136.30-2015
American National Standard for Roadway and Area Lighting Equipment—Pole Vibration
Covers the minimum vibration withstand requirements and testing procedures for poles used in roadway and area lighting. The guide is intended for poles of 50-ft mounting height and under.
$62
Buy Now

ANSI C136.31-2018
American National Standard for Roadway and Area Lighting Equipment—Luminaire Vibration
Covers the minimum vibration withstand capability and vibration test methods for roadway and area luminaires.
$45
Buy Now
ANSI C136.32-2012
American National Standard for Roadway and Area Lighting Equipment—Enclosed Setback Luminaires and Directional Floodlights for High-Intensity Discharge (HID) Lamps
Covers dimensional, maintenance and electrical features that permit the interchange of similar style enclosed luminaires having the same light distribution classification or type for HID lamps used in roadway and area lighting equipment. Luminaires covered by this standard are generally yoke-, trunnion- or tenon-mounted and are traditionally called floodlights or setback luminaires. $59

ANSI C136.34-2014
American National Standard for Roadway and Area Lighting Equipment—Vandal Shields for Roadway and Area Lighting Luminaires
Covers supplementary vandal shields used to protect luminaires and luminaire accessories used for roadway and area lighting. $64

ANSI C136.35-2009 (R2014)
American National Standard for Roadway and Area Lighting Equipment—Luminaire Electrical Ancillary Devices (LEAD)
Covers the electrical and mechanical interchangeability of electrical devices mounted on or in luminaires, brackets, or remotely mounted on the support structure of the luminaire and that may draw power from the luminaire. $54

ANSI C136.37-2011
American National Standard for Solid State Light Sources Used in Roadway and Area Lighting
Defines interchangeability and some requirements for solid state lighting (SSL) source fixtures. Includes requirements for operating temperature, correlated color temperature, mounting provisions, dimming, ingress protection, and wiring and grounding. Sets protocol for surge-test waveforms, the basic insulation test, and specific product ratings. $68

ANSI C136.38-2015
American National Standard for Roadway and Area Lighting Equipment—Induction Lighting
Defines electrical and mechanical requirements of induction-type light sources for use in roadway and area lighting luminaires. $53

ANSI C136.40-2014
American National Standard for Roadway and Area Lighting Equipment—Solar Lighting Systems
Defines requirements for the specification and installation of dc solar-powered roadway and area lighting systems. $67

ANSI C136.41-2013
American National Standard for Roadway and Area Lighting Equipment—Dimming Control Between an External Locking Type Photocontrol and Ballast or Driver
Describes methods of light level control between an external locking type photocontrol (or similar device) and a dimmable ballast or driver for street and area lighting equipment. Mechanical, electrical, and marking requirements are established for dimming, locking type photocontrols and mating receptacles. $69

ANSI C136.45-2011 (R2016)
American National Standard for Roadway and Area Lighting Equipment—Aluminum Lighting Poles
Provides specification information for aluminum lighting poles as used in roadway and area lighting applications. $72

ANSI C136.46-2013
American National Standard For Roadway and Area Lighting Equipment—Concrete Lighting Poles
Applies to concrete lighting poles used in roadway and area lighting equipment and includes nomenclature, performance criteria, marking and record keeping requirements and certain minimal material needs. It does not cover concrete poles manufactured with any modified concrete mix incorporating the use of polymers or other modifiers. $66

ANSI C136.47-2010 (R2015)
American National Standard for Roadway and Area Lighting Equipment—Steel Roadway and Area Lighting Poles
Provides construction and performance guidance for steel poles used in roadway and area lighting applications. $72
ANSI C136.49-2016  
American National Standard for Roadway and Area Lighting Equipment—Plasma Lighting  
Defines the electrical and mechanical requirements of plasma type light sources for use in roadway and area lighting luminaires.  
$57  
Buy Now  

ANSI C136.53-2017  
American National Standard for Roadway and Area Lighting Equipment—Enclosed Pendant Mounted Luminaires  
Covers dimensional, maintenance, and light distribution features that permit the interchange of enclosed pendant-mounted luminaires whose center mass is directly below the mounting bracket.  
$42  
Buy Now  

ANSI C137.0-2017  
American National Standard For Lighting Systems—Lighting Systems Terms and Definitions  
Definitions listed in this document apply or are directly related to lighting systems and are used in multiple lighting system standards.  
$28  
Buy Now  

ANSI C137.3-2017  
American National Standard for Lighting Systems—Minimum Requirements for installation of Energy Efficient Power over Ethernet (PoE) Lighting Systems  
Specifies the minimum requirements for installation of Power over Ethernet (PoE) lighting systems to ensure minimal energy losses.  
$50  
Buy Now  

American National Standard for Electric Lamps—Condenser-Reflector, Four-Pin Prefocus-Base Projection Lamps—Dimensions  
Specifies the dimensions essential to the interchangeability of condenser-reflector lamps having four-pin prefocus bases, T12 or T14 bulbs, and used in 8mm motion-picture projectors.  
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Buy Now  

NEMA BL 2-2009  
Energy Efficiency for Electronic Ballasts for T8 Fluorescent Lamps  
Includes energy-efficiency requirements for declaration as NEMA Premium®-rated products and for evaluating electronic ballasts designed for use with 4-ft 32 W T8 fluorescent lamps with a lumen output greater than or equal to 3,100 lumens.  
$45  
Buy Now  

NEMA BL 3-2013  
Dimming Ballast Energy Performance  
Provides a methodology for applying existing test methods for program start ballasts to fluorescent dimming ballasts and provides a way to calculate BLE for fluorescent dimming ballasts. This standard offers BLE limits for ballasts of common four-foot bipin lamps, such as T8 and T5 lamps, that are not covered by the most recent Federal Rulemaking.  
$41  
Buy Now  

NEMA DCP 1-2018  
Direct Current in Buildings  
Summarizes the results from a survey on DC in buildings and provides background on the primary drivers for DC systems. It also highlights potential benefits of using DC in buildings and opportunity areas in next five to ten years.  
$0  
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STANDARDS & OTHER PUBLICATIONS: Lighting

NEMA FL SET  
Fluorescent Set  
The fluorescent lamps and ballasts package classifies as either double-ended or single-ended lamps. Glow starters are also covered by this product. Set includes ANSI C78.5, ANSI C78.30, ANSI C78.81, ANSI C78.180, ANSI C78.375, ANSI C78.376, ANSI C79.1, ANSI C81.61, ANSI C81.62, ANSI C81.63, ANSI C82.1, ANSI C82.11, ANSI C82.12, ANSI C82.13, ANSI C82.2, ANSI C82.3, ANSI C82.77.  
$2,055

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NEMA HID SET  
HID Set  
High intensity discharge lamps and ballasts standards set contains low/high pressure lamps and metal-halide lamps. Set includes ANSI C78.30, ANSI C78.40, ANSI C78.41, ANSI C78.42, ANSI C78.43, ANSI C78.44, ANSI C78.45, ANSI C78.379, ANSI C78.380, ANSI C78.389, ANSI C79.1, ANSI C81.61, ANSI C81.62, ANSI C81.63, ANSI C82.14, ANSI C82.4, ANSI C82.6, ANSI C82.77, ANSI C82.9.  
$2,183

Buy Now

NEMA IL SET  
Incandescent Set  
The incandescent lamps set package are general lighting, projector lamps, miniature lamps, automotive lamps, aircraft lamps, stage lamps and studio lamps. Set includes ANSI C78.20, ANSI C78.21, ANSI C78.22, ANSI C78.23, ANSI C78.24, ANSI C78.25, ANSI C78.260, ANSI C78.261, ANSI C78.357, ANSI C78.370, ANSI C78.370.390, ANSI C78.379, ANSI C78.390, ANSI C78.391, ANSI C78.1401, ANSI C78.1402, ANSI C78.1403, ANSI C78.1406, ANSI C78.1407, ANSI C78.1408, ANSI C78.1413, ANSI C78.1417, ANSI C78.1420, ANSI C78.1421, ANSI C78.1431, ANSI C78.1432, ANSI C78.1433, ANSI C78.1434, ANSI C78.1450, ANSI C78.1451, ANSI C78.1460, ANSI C78.604321, ANSI C78.604322, ANSI C78.604323, ANSI C78.604324, ANSI C81.62, ANSI C81.63, ANSI C82.77.  
$2,183

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NEMA SSL SET  
SSL Set  
Solid state lighting standards include semiconductor light sources—light emitting diodes (LEDs), laser diodes, organic LEDs, and any other semiconductor light sources; controlgear; light emitting diode (LED) drive circuits; and microwave power supplies for electrodeless lamps. The set includes: ANSI C78.30, ANSI C78.377, ANSI C78.79, ANSI C81.61, ANSI C81.62, ANSI C81.63, ANSI C82.77, NEMA SSL 1, NEMA SSL 3, NEMA SSL 4, NEMA SSL 6, and NEMA SSL 7A.  
$1,656

Buy Now

NEMA LC 1-2007 (R2018)  
Test Procedure for Compatibility of Hearing Aids and Ultrasonic Lighting Control Devices  
Sets forth test procedures for use with a small acoustic chamber to evaluate potential interactions between hearing aids and ultrasonic lighting control devices (occupancy sensors). Test procedures are designed to simulate and test occupancy sensors at three typical, specific frequencies (25 kHz, 32.7 kHz and 40 kHz) and one type of hearing aid.  
$61

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NEMA LE 4-2012  
Recessed Luminaires—Ceiling Compatibility  
Contains definitions, dimensions and tolerances for recessed luminaires designed to use fluorescent high-intensity discharge and incandescent light sources.  
$88

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NEMA LE 5-2001  
Procedure for Determining Luminaire Efficacy Ratings for Fluorescent Luminaires  
Establishes a luminaire efficacy rating based on rated lumens per watt and organizes luminaires into categories that will reasonably represent the characteristics of high-volume luminaires. Serves as the basis for the National Voluntary Information and Rating Program for widely used luminaires. When rating a fixture in accordance with EPAct 1992, use this standard. For other purposes, see NEMA LE 6, a newer standard for luminaire efficacy that supersedes the LE 5 series.  
$76

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2019 ELECTRICAL STANDARDS & PRODUCTS GUIDE  37
NEMA LE 5A-1999
Procedure for Determining Luminare Efficacy Ratings for Commercial, Non-Residential Downlight Luminaries
Provides a standardized test method for determining the luminare efficacy rating of incandescent, compact fluorescent and low-wattage high-intensity discharge downlight luminaires. When rating a fixture in accordance with EPAct 1992, use this standard. For other purposes, see NEMA LE 6, a newer standard for luminare efficacy that supersedes the LE 5 series.
$82

NEMA LE 5B-1998
Procedure for Determining Luminare Efficacy Ratings for High-Intensity Discharge (HID) Industrial Luminaires
Provides standardized tests to evaluate the energy efficiency of HID industrial luminaires. Provides a procedure for determining the luminare efficacy ratings under laboratory test conditions, including visual tasks involved, luminare placement, such performance characteristics as color and glare, lighting maintenance, on/off level control and a ballast’s ability to regulate lamp wattage. When rating a fixture in accordance with EPAct 1992, use this standard. For other purposes, see NEMA LE 6, a newer standard for luminare efficacy that supersedes the LE 5 series.
$80

NEMA LE 6-2014
Procedure for Determining Target Efficacy Ratings for Commercial, Industrial, and Residential Luminaires
Provides a procedure for the determination of TER for luminaires under laboratory test conditions and describes categories or types of product used in common indoor and outdoor lighting applications. This standard does not apply to luminaires for specialized applications, including but not limited to products intended to be aimed, accent luminaires, rough or hazardous use luminaires or emergency lighting.
$80

NEMA LE 5-2015
Recessed Luminaires Intended for Contact with Expanding Polyurethane Foam Insulation
Defines a subset of insulation contact (Type IC) luminaires that are appropriate for use with polyurethane spray foam. This standard also provides requirements and recommendations for Type IC recessed luminaires intended for installation in contact with low-density and medium-density polyurethane foam thermal insulation.
$57

NEMA LL 8-2010
Limits on Mercury Content in Self-Ballasted Compact Fluorescent Lamps
Covers limited integral, self-ballasted compact fluorescent lamps of all base types. Applies to integral, self-ballasted compact fluorescent lamps manufactured or imported after September 2010.
$45

NEMA LL 9-2011
Dimming of T8 Fluorescent Lighting Systems
Provides recommendations for dimmable T8 fluorescent lighting systems for the full range of light output.
$54

NEMA LSCR-PP 1-2015
Light Source Color Rendition
$0

NEMA LSD 1-2003 (R2011)
Tungsten Halogen (TH) Lamps (Bulbs)
Ultraviolet, Rupture and High Temperature Risks
Addresses the benefits and the safe operation of TH lamps.
$0

NEMA LSD 2-2012
Wiring Requirements for T8 Lamps with Instant-Start Ballasts
Addresses field problems related to the retrofit of T8 lamps and instant-start ballasts into existing luminaires.
$0

NEMA LSD 4-1999
Glossary of Terms Pertaining to Remote Illumination Systems
Defines the more common terms associated with remote illumination systems intended to generate and/or conduct light from its source, an illuminator, through a light guide assembly to one or more remote locations, luminaires, for the purpose of illumination.
$0

NEMA LSD 7-1999 (R2012)
Ultraviolet Radiation (UV) from Fluorescent Lamps
Discusses various scientific studies on possible effects of exposure to light sources reported in the popular press. This interest has been stimulated by the fact that 1) most light sources emit some small amount of UV energy, and 2) extended exposure to the high UV levels in sunlight can cause adverse effects in the skin.
$0
### NEMA LSD 8-2014
Power Quality Implications of Self-ballasted Lamps in Residences
This paper provides information about self-ballasted lamps and the implications these lamps present from a power quality perspective. It focuses on the use of self-ballasted lamps in residences and on residential power quality. Self-ballasted lamps have dedicated ballasts that are part of the lamp itself. This allows the lamp to be used in some sockets that were originally meant for incandescent lamps. The ballast intercepts the electrical current before it enters the bulb itself, and it cannot be removed from the base. CFLs and some LED lamps are examples of self-ballasted lamps.

**$0**

### NEMA LSD 9-2000 (R2011)
Compatibility of Add-on Tube Guards with T8 Fluorescent Lamps Operating on High-Frequency Electronic Ballasts
Addresses concerns that arise in the field regarding the use of plastic tube guards on T-8 fluorescent lamps operated on high-frequency electronic ballasts.

**$0**

### NEMA LSD 10-2000
Facilitates the safe installation and use of remote illumination systems equipment. Includes consistent applicable definitions.

**$0**

### NEMA LSD 11-2010
White Paper on Outdoor Lighting Issues and Quality Lighting Applications
Provides information related to outdoor lighting issues and quality lighting. Identifies specific lighting issues, explains the interaction of these issues, defines correct lighting terminology and provides straightforward technical guidance.

**$0**

### NEMA LSD 13-2001
Exit Sign Brightness for Visibility and Safety
Provides a brief background on life safety codes and standards requirements, reviews exit sign technologies relative to brightness, summarizes visibility research results and sets forth recommendations for the visibility of exit signs to promote safety.

**$0**

### NEMA LSD 14-2012
Guidelines on the Application of Dimming to High-Intensity Discharge Lamps
Imparts general information and considerations in the design and application of such systems. Contact the manufacturers of the lamps, ballasts, and dimming systems for specific recommendations.

**$0**

### NEMA LSD 18-2003 (R2012)
Compatibility of Fluorescent Lamps and Electronic Ballasts in Frequently Switched Applications
Provides guidance in the selection of ballast type as a function of lamp switching rate to achieve the desired energy savings while maintaining acceptable lamp life.

**$0**

### NEMA LSD 21-2012
End-of-life Operation of Small Diameter (5/8 in. Diameter or Less) Pin-Based Fluorescent Lamps
Addresses variations in electrical and thermal parameters of small-diameter fluorescent lamps.

**$0**

### NEMA LSD 23-2016
Recommended Practice—Lamp Seasoning for Fluorescent Dimming Systems
This paper provides a recommended practice to season lamps for Fluorescent Dimming Systems.

**$0**

### NEMA LSD 24-2012
Marking of Luminaire Codes on Metal Halide Lamps
Provides information on marking metal halide lamps with the manufacturer's commercial designation, including lamp wattage, ANSI code, lamp type, electrical code, and luminaire code.

**$0**

### NEMA LSD 27-2012
Best Practices for Operating Fluorescent Lighting Systems
Summarizes information and recommendations found in more detailed NEMA papers on individual topics, as well as additional information and recommendations. The information benefits customers seeking to ensure proper operation of fluorescent systems to maximize system reliability and operational economy.

**$0**

### NEMA LSD 28-2014
Minimizing the Potential of Base Arcing Between Certain Wattage HID Lamps and Lampholders
Provides information regarding Use of Appropriate HID Lamp Holders to Minimize Potential Base Arcing with Certain HID Lamp Wattages.

**$0**

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**NEMA LSD 29-2012**  
Incompatibility of T8 Ballasts (RS, PS, Dimming) and Shunted Bi-Pin Lampholders  
Provides information on incorrect applications of bi-pin lampholders (tombstones) used with rapid-start (RS), programmed start (PS) and dimming ballasts. These incorrect applications have occurred in both new luminaires and field lamp and ballast retrofits.  
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**NEMA LSD 34-2012**  
Recommended Practices for T8 Rapid-Start Fluorescent Lamp Dimming (17 W, 25 W, 32 W and 40 W Lamps)  
Addresses the selection, integration, installation, application and maintenance of the dimming system components that together constitute a T8 fluorescent lamp-dimming system.  
$0  
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**NEMA LSD 35-2012**  
ANSI Code Update to Include Letter C for Ceramic Metal Halide Lamps  
Addresses ANSI code changes for ceramic metal halide lamps.  
$0  
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**NEMA LSD 40-2014**  
Failure Modes for Self-Ballasted Compact Fluorescent Lamps (SBCFLs)—A NEMA Update  
Explains in simplified terms why SBCFLs have different failure modes from normal incandescent lamps.  
$0  
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**NEMA LSD 41-2012**  
UN2911 Labeling and Transportation of Lamps Containing Radioactive Substances  
Provides information about shipping and labeling of lamps that contain radioactive substances. The vast majority of light bulbs, also called lamps by the lighting industry, do not contain any radioactive materials. Certain types contain very small amounts of radioactive isotopes which help to improve lamp ignition, lamp life and lumen maintenance.  
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**NEMA LSD 45-2009**  
Recommendations for Solid State Lighting Sub-Assembly Interfaces for Luminaires  
Provides guidance on the design and construction of interconnects (sockets) for solid state lighting applications.  
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**NEMA LSD 46-2009**  
Photoluminescent Exit Signage—Factual Review  
Describes concerns regarding the marketing and application recommendations common to photoluminescent exit signage in the U.S. and Canada. Intended to educate potential users as to the considerations regarding installing and relying upon this type of emergency equipment. Includes 12/16/09 editorial correction to labeling of units and equivalents for lumenance values.  
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**NEMA LSD 49-2010**  
Solid State Lighting for Incandescent Replacement—Best Practices for Dimming  
Provides recommendations for the dimming and design of screw-based incandescent replacement solid state lighting products.  
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**NEMA LSD 55-2010**  
Outdoor Lighting and Human/Animal Factors An Industry Opinion  
Outlines industry concerns and opinions regarding the subject of light at night and outdoor electric lighting as related to humans, animals, energy conservation and the environment.  
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**NEMA LSD 56-2011**  
Compatibility of Forward Phase Control Dimmers and Dimmable Self-Ballasted Compact Fluorescent Lamps and Frequently Asked Questions Regarding CFLs and Dimming  
Provides design guidance in the area of lamp/dimmer compatibility to manufacturers of dimmable self-ballasted compact fluorescent lamps (CFLs) using forward phase control and manufacturers of forward phase control dimmers. The values provided assume operation under nominal line conditions, i.e. 120 V, 60 Hz.  
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**NEMA LSD 57-2018**  
Polyurethane Foam Application: Lighting Equipment  
Provides information regarding practical aspects of applying spray foam insulation that may come into contact with luminaires in various building applications.  
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**NEMA LSD 58-2017**  
Air Infiltration Ratings for Recessed Luminaires  
Addresses the standard test procedure, installation requirements, and labeling applicable to luminaires to demonstrate limited airflow.  
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NEMA LSD 60-2012
The Effects of Dimming on Color and Efficacy of LED Lamps
Describes and demonstrates the effects of dimming on color and efficacy of LED-based lamps.
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NEMA LSD 61-2012
Fluorescent Dimming Standards Development Report
Summarizes TFDS work and presents final results in a report for more detailed cited publications.
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NEMA LSD 62-2012
Systems Approach for Lighting
Maximizes energy savings by shifting the regulatory focus from appliance standards to lighting systems standards as incorporated into building energy code.
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NEMA LSD 63-2012
Measurement Methods and Performance Variation for Verification Testing of General Purpose Lamps and Systems
Establishes variations that can be expected when independent verification testing. Generally this is based on small samples of lamps or ballasts performed to estimate product performance characteristics and for comparison to manufacturer’s ratings.
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NEMA LSD 64-2014
Lighting Controls Terminology
Defines terminology related to controls for lighting systems for non-residential and residential applications.
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NEMA LSD 65-2012
NEMA Guide to Emergency Lighting
Provides information on emergency lighting systems, related codes, and regulations. This is not a “How To” manual for emergency lighting and exit signs. It is designed to provide a basic understanding of emergency lighting unit and exit sign equipment and how it functions.
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NEMA LSD 66-2017
Understanding the New Fluorescent Ballast Rule EPCA 10 CFR 430
Provides educational information about the Fluorescent Ballast Rule and the associated measurement methods.
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NEMA LSD 67-2013 (R2018)
Low Mercury Controllable Fluorescent Systems
Discusses technical tradeoffs associated with reduced mercury dosing in fluorescent lighting systems and their environmental impacts. NEMA members are committed to providing fluorescent lighting systems that allow lamps to be controlled to save energy, while reducing the mercury content in the lamps to the extent that it is technically possible without sacrificing functionality.
$0

NEMA LSD 68-2013
Remote Phosphor Devices Used in LED Lamps, Engines and Luminaires
Facilitates development of testing and certification procedures that will allow the qualification of pump or source devices, pumped conversion materials/remote phosphors and reflective materials independently then qualification of the remote phosphor system (pump + conversion material + mixing chamber material, if applicable). This can simplify the testing required to qualify for ENERGY STAR®.
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NEMA LSD 70-2014
A Comparison of High Performance Luminaire Programs in the US Market
Illustrates the luminaire types covered by ENERGY STAR® Luminaires, DesignLights Consortium, and Federal Energy Management Program (FEMP) guidelines and notes where the overlaps occur.
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NEMA LSD 71-2014
Best Practices for Metal Halide Lighting Systems Relative to Lamp Rupture Risks
The objective of this paper is to provide updated educational information for the selection, operation, and maintenance of metal halide lighting systems, with specific emphasis on those items pertinent to the risks associated with lamp rupture.
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NEMA LSD 73-2015
Energy Savings with Fluorescent and LED Dimming
Includes dimmable fluorescent ballast and Light Emitting Diode (LED) drivers that are controlled by 0-10 V (1-10 V) control input. This paper explains the relationship between the control input voltage and overall energy consumed by these ballasts and drivers.
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NEMA LSD 74-2016
Considerations of Field LED Driver Replacement
Discusses issues related to the field replacement of drivers in LED lighting fixtures, and how several aspects must be considered to ensure that the replacement driver will function the same as the original driver.
$0

2019 prices are for print copies only. Network versions may be available. Some electronic copies are offered at no charge or at a discount.
STANDARDS & OTHER PUBLICATIONS: Lighting

NEMA LSD 76-2017
White Paper on the Usage of LED Lamps in Emergency Lighting Systems Having Remote Capacity
Contains a series of frequently asked questions to assist customers in understanding remote capacity and the usage of LED lamps in emergency lighting systems.
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NEMA LSD 79-2018
Predicted Energy Savings from Lighting Systems
Includes a framework used to gauge the effectiveness of different lighting control methods. This paper is indifferent to the manufacturer of a controls system and provides a modular approach to measuring the “potential” savings realized from various lighting systems.
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NEMA LSD 80-2018
Installation Guidelines for Outdoor Luminaires—Grounding Considerations
Addresses application of the National Electrical Safety Code® (NESC) as it pertains to the grounding of outdoor luminaires and recommends installation guidelines.
$0

NEMA LSD E11-2001
Fluorescent Lamps and the Environment
Answers questions regarding lamp technology and the presence of mercury therein, environmental concerns and industry and regulatory efforts. Fluorescent lamps and high-intensity discharge lamps contain small quantities of mercury. Concerns over mercury releases to the air and water are driving stricter disposal regulations.
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NEMA SSL 1-2016
Electronic Drivers for LED Devices, Arrays or Systems
Provides specifications for and operating characteristics of non-integral electronic drivers (power supplies) for LED devices, arrays or systems intended for general lighting applications.
$69

NEMA SSL 4-2012
Retrofit Lamps—Minimum Performance Requirements
Applies to integral Light Emitting Diode (LED) lamps, which is defined as a lamp with LEDs, LED driver, and base meeting appropriate American National Standards (ANSs). It is designed to connect to the branch circuit.
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NEMA SSL 6-2010
Solid State Lighting for Incandescent Replacement—Dimming
Provides guidance for those seeking to design and build or work with solid state lighting products intended for retrofit into systems that previously used incandescent screw base lamps. Addresses dimming of these products and the interaction between the dimmer (control) and the bulb (lamp).
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NEMA SSL 7A-2015
Phase-Cut Dimming for Solid State Lighting—Basic Compatibility
Provides compatibility requirements when a forward phase-cut dimmer is combined with one or more dimmable light-emitting diode (LED) light engines (LLEs).
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NEMA SSL 2015
Temporal Light Artifacts (Flicker and Stroboscopic Effects)
Addresses temporal light artifacts (TLAs). Flicker and stroboscopic effects are undesired changes in visual perception induced by a light stimulus whose luminance or spectral distribution fluctuates with time, for an observer in a certain environment.
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ANSI C78.5-2017
American National Standard for Electric Lamps—Specifications for Performance of Self-ballasted Compact Fluorescent Lamps
This standard specifies the performance requirements together with the test methods and conditions required to show compliance of self-ballasted compact fluorescent lamps up to 60 W which are intended for domestic and similar general lighting purposes.
$59

ANSI C82.5-2016
American National Standard for Reference Ballasts—High-Intensity-Discharge and Low-Pressure Sodium Lamps
Describes the essential features and operating characteristics of reference ballasts for high-intensity discharge and low-pressure sodium lamps to operate on 60-Hz sinusoidal ballast systems.
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### Measuring & Metering

**ANSI C12.1-2014**  
**American National Standard for Electric Meters—Code for Electricity Metering**  
This Code establishes acceptable performance criteria for new types of ac watthour meters, demand meters, demand registers, pulse devices, and auxiliary devices. It describes acceptable in-service performance levels for meters and devices used in revenue metering. It also includes information on related subjects, such as recommended measurement standards, installation requirements, test methods, and test schedules. This Code for Electricity Metering is designed as a reference for those concerned with the art of electricity metering, such as utilities, manufacturers, and regulatory bodies.  
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**ANSI C12.4-1984 (R2002, R2011)**  
**American National Standard for Registers—Mechanical Demand**  
Covers the voltage and frequency rating, full-scale values, scale classes, demand intervals, multiplying constants, timing mechanism and other general features of mechanical demand registers required for use on watthour meters.  
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**ANSI C12.5-1978 (R2002, R2012)**  
**American National Standard for Thermal Demand Meters**  
Establishes the physical aspects and acceptable performance criteria for 0.2 and 0.5 accuracy class electricity meters meeting Blondel's Theorem.  
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**American National Standard for Watthour Meter Sockets**  
Covers the general requirements and pertinent dimensions applicable to watthour meter sockets rated up to and including 600 V and up to and including 320 A continuous duty per socket opening.  
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**ANSI C12.7-2014**  
**American National Standard for Requirements for Watthour Meter Sockets**  
Covers the general requirements and pertinent dimensions applicable to watthour meter sockets rated up to and including 600 V and up to and including 320 A continuous duty per socket opening.  
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**American National Standard for Test Blocks and Cabinets for Installation of Self-Contained A-Base Watthour Meters**  
Covers the dimensions and functions of test blocks and cabinets used in self-contained A-base watthour meters.  
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**ANSI C12.9-2014**  
**American National Standard for Test Switches and Plugs for Transformer-Rated Meters**  
Encompasses the dimensions and functions of meter test switches used with transformer-rated watthour meters in conjunction with instrument transformers and test plugs used in conjunction with the test switch.  
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**ANSI C12.19-2012**  
**American National Standard for Utility Industry End Device Data Tables**  
Defines a Table structure for utility application data to be passed between an End Device and any other device. It neither defines device design criteria nor specifies the language or protocol used to transport that data. The Tables defined in this Standard represent a data structure that shall be used to transport the data, not necessarily the data storage format used inside the End Device.  
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**ANSI C12.10-2011**  
**American National Standard for Physical Aspects of Watthour Meters—Safety Standard**  
Covers the physical aspects of both detachable and bottom-connected watthour meters and associated registers including ratings, internal wiring arrangements, pertinent dimensions, markings and other general specifications.  
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**ANSI C12.11-2006 (R2014)**  
**American National Standard for Instrument Transformers for Revenue Metering, 10 kV BIL through 350 kV BIL (0.6 kV NSV through 69 kV NSV)**  
Covers the general requirements, metering accuracy, thermal ratings and dimensions applicable to current and inductively coupled voltage transformers for revenue metering.  
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ANSI C12.18-2006 (R2016)
American National Standard for Protocol Specification for ANSI Type 2 Optical Port
Details the criteria required for communications between a C12.18 device and a C12.18 client via an optical port. The C12.18 client may be a handheld reader, a portable computer, a master station system or another electronic communications device.
$113

ANSI C12.20-2015
American National Standard for Electricity Meters—0.2 and 0.5 Accuracy Classes
Establishes the physical aspects and acceptable performance criteria for 0.2 and 0.5 accuracy class electricity meters meeting Blondel’s Theorem.
$107

ANSI C12.21-2006 (R2016)
American National Standard for Protocol Specification for Telephone Modem Communication
Details the criteria required for communications between a C12.21 device and a C12.21 client via a modem connected to the switched telephone network. The C12.21 client could be a laptop or portable computer, a master station system or another electronic communications device.
$145

ANSI C12.22-2012
American National Standard for Protocol Specification for Interfacing to Data Communication Networks
Describes the process of transporting C12.19 table data over a variety of networks, with the intention of advancing interoperability among communications modules and meters. Uses AES encryption to enable strong, secure Smart Grid communications, including confidentiality and data integrity, and is also fully extensible to support additional security mechanisms the industry may require in the future.
$239

ANSI/NEMA C93.1-1999
American National Standard for Requirements for Power-Line Carrier Coupling Capacitors and Coupling Capacitor Voltage Transformers (CCVTs)
Applies to capacitors for coupling power-line carriers and for reducing rate of rise of breaker transient recovery voltage, and to CCVTs for connection to a high voltage power circuit, between line and ground, to supply a low voltage for measurement, control and protective functions.
$109

ANSI/NEMA SG-IPRM 1-2016
Smart Grid Interoperability Process Reference Manual
Defines requirements and recommendations for general test policies, test suite specifications, test profiles, interoperability testing and certification authority technical programs, governance, laboratory qualifications, and (process) improvements. It also describes an implementation approach.
$125

NEMA C12.24 TR-2011
NEMA Technical Report Definitions for Calculations of VA, VAh, VAR, and VARh for Poly-Phase Electricity Meters
Establishes names and mathematical definitions for the volt-ampere (VA), volt-ampere hours (Vah), volt-ampere reactive (VAR) and volt-ampere reactive hours (VARh), formulae used by polyphase electricity meters. The mathematical definitions assume static waveforms.
$87

NEMA C12.30 TR-2013
Test Requirements for Metering Devices Equipped with Service Switches
Identifies test requirements for meters containing a service switch. Most of the tests included in this report are tailored to fit service switch type meters and originate from the ANSI C12.1-2008 standard. The intent is to use this technical report in conjunction with C12.1-2008. Other tests that are specific to the service switch have been added for completeness.
$50

NEMA SG-AMI 1-2009 (R2015)
Requirements for Smart Meter Upgradeability
Defines requirements for smart meter firmware upgradeability in the context of an advanced metering infrastructure system for industry stakeholders such as regulators, utilities and vendors.
$72
# NEMA SM SET
**Smart Meter Package**
Provides requirements and guidance on electricity metering, watthour meter sockets, device data tables, meter interfacing to data communication networks and type 2 optical ports. Also establishes performance criteria for thermal demand meters, mechanical demand registers and phase-shifting devices used in metering. Test methods for transformer-rated meters and self-contained “A” base watthour meters are included in this package, as is a watthour safety standard. The package contains all parts of ANSI C12, as well as NEMA SG-AMI 1.

$1,545

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### NEMA Medical Standards

**HIMSS/NEMA HN 1-2013**
**Manufacturer Disclosure Statement for Medical Device Security**
Consists of the MDS2 form and instructions for completing it. Assists professionals responsible for security-risk assessment in the management of medical device security issues. The information on the MDS2 form is not intended, and may be inappropriate, for other purposes.

$0

**MITA/NEMA CTSDC-2015**
**Is Your CT Smart Dose Compliant?**
Clarifies with CT users and hospital administrative staff how to determine whether their CT equipment conforms to the Smart Dose Standard and outlines important considerations for assessing system modifications marketed to obtain Smart Dose Standard conformance.

$0

**NEMA MS 1-2008 (R2014)**
**Determination of Signal-to-Noise Ratio (SNR) in Diagnostic Magnetic Resonance Imaging**
Defines methods for measuring the signal-to-noise ratio of magnetic resonance images obtained under a specific set of conditions, and using single-channel volume receiver coils. This document does not address the use of special purpose coils (see MS 6) or coils that employ multiple receiver channels for operation (see MS 9).

$70

**NEMA MS 2-2008 (R2014)**
**Determination of Two-Dimensional Geometric Distortion in Diagnostic Magnetic Resonance Images**
Describes a method for determining the maximum percent difference between measured distances in an image and actual corresponding phantom dimensions. The procedure described evaluates geometric distortion in three orthogonal planes passing through the center of the specification volume.

$72

**NEMA MS 3-2008 (R2014)**
**Determination of Image Uniformity in Diagnostic Magnetic Resonance Images**
Defines a method for measuring image-uniformity performance of diagnostic magnetic resonance imaging systems using single channel volume coils and performing proton imaging. This document does not address the use of surface coils, chemical shift imaging, or spectroscopy.

$76

**NEMA MS 4-2010**
**Acoustic Noise Measurement Procedure for Diagnostic Magnetic Resonance Imaging (MRI) Devices**
Provides methods for determining the acoustic noise level of an MRI system.

$80

**NEMA MS 5-2018**
**Determination of Slice Thickness in Diagnostic Magnetic Resonance Imaging**
Describes a method for determining the slice thickness of proton images. Does not address spectroscopy, chemical shift imaging and warped slices.

$83

**NEMA MS 6-2008 (R2014)**
**Determination of Signal-to-Noise Ratio and Image Uniformity for Single-Channel, Non-Volume Coils in Diagnostic Magnetic Resonance Imaging (MRI)**
Defines test methods for measuring the signal-to-noise ratio and image uniformity of MR images produced using special purpose single-channel non-volume coils or a single channel of an array coil.

$54

**NEMA MS 8-2016**
**Characterization of the Specific Absorption Rate (SAR) for Magnetic Resonance Imaging Systems**
Describes calorimetric and pulse energy methods of whole-body SAR measurements. Specifies tests for volume RF transmit coils that produce relatively homogeneous RF fields.

$96

**NEMA MS 9-2008 (R2014)**
**Characterization of Phased Array Coils for Diagnostic Magnetic Resonance Images (MRI)**
Defines test methods for measuring the signal-to-noise ratio and image uniformity of MR images produced using receive-only phased array coils. Other coil configurations have been addressed in MS 1, MS 3, and MS 6.

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| NEMA MS 10-2010 | Determination of Local Specific Absorption Rate (SAR) in Diagnostic Magnetic Resonance Imaging (MRI) | Defines methods for determining the local SAR of diagnostic MRI radio frequency coils under a specific set of conditions. $80 | Buy Now |
| NEMA MS 12-2016 | Quantification and Mapping of Geometric Distortion for Special Applications | Defines test methods for measuring the absolute spatial variation of geometric accuracy within magnetic resonance images. This standard presents the absolute geometric accuracy as a map, graph or table throughout the imaging region rather than as simple figures of merit, such as average or worst-case error. $80 | Buy Now |
| NEMA NU 3-2004 | Performance Measurements and Quality Control Guidelines for Non-Imaging Intraoperative Gamma Probes | Establishes definitions and describes quantitative measurements of performance characteristics and quality control tests for non-imaging intraoperative gamma probes. $107 | Buy Now |
| NEMA NU 4-2008 | Performance Measurements of Small Animal Positron Emission Tomographs (PETs) | Proposes a standardized methodology for evaluating the performance of PETs designed for animal imaging. Establishes a baseline of system performance in typical imaging conditions independent of camera design and applies to a wide range of camera models and geometries. Represents a subset of measurements that characterize the performance of PETs for specific imaging tasks typically encountered in small laboratory animal imaging facilities. This subset is deemed to be common across all tomographs existing at the time of publication. $88 | Buy Now |
| NEMA RT 1-2014 | Gating Interface | Provides a detailed description of the gating interface between Radiation Therapy Treatment Delivery Devices (TDD), commonly called linear accelerators or other particle therapy accelerators and Patient Position Monitoring Systems (PPMS). $41 | Buy Now |
| NEMA UD 2-2004 (R2009) | Acoustic Output Measurement Standard for Diagnostic Ultrasound Equipment, Revision 3 | Covers all active ultrasound apparatus designed for medical diagnostic use, including ultrasonic echo ranging devices (both manual and automatically scanned), through-transmission devices, Doppler echo equipment and combinations thereof. $225 | Buy Now |
| NEMA XR 16-1991 (R1996, R2001) | Test Standard for the Determination of the System Contrast Ratio (SCR) and the System Veiling Glare Index (SVGI) of an X-Ray Image Intensifier (XRII) System | Determines the SCR and the SVGI at the center of the image produced by an XRII system under a given set of test conditions. The measurement procedures described pertain to images formed by photofluorographic film, cine film, video and direct-viewing systems. $64 | Buy Now |

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NEMA XR 22-2006
Quality Control Manual Template for Manufacturers of Displays and Workstations Labeled for Final Interpretation in Full-Field Digital Mammography (FFDM)
Defines the minimum set of quality control tests to be applied to a manufacturer’s product labeled for final interpretation of images acquired using an FFDM image-acquisition system.
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NEMA XR 23-2006
Quality Control Manual Template for Manufacturers of Hardcopy Output Devices Labeled for Final Interpretation in Full-Field Digital Mammography (FFDM)
Features templates that provide a consistent presentation format and a minimum set of quality control tests that should be included as part of the quality assurance plan of a hardcopy output device (e.g., printer) labeled for final interpretation in an FFDM system.
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NEMA XR 25-2010
Computed Tomography Dose Check
Specifies an equipment feature for CT scanners to produce dose-related notification and alert messages to inform operators prior to scanning if the estimated dose would exceed the preset levels.
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NEMA XR 26-2012
Access Controls for Computed Tomography—Identification, Interlocks, and Logs
Applies to the particular functioning of a CT system (as covered by the scope of IEC 60601-2-44) as it relates to who has access/permission to use the system for clinical or other uses. Includes being able to assign specific permissions to selected uses that are above those needed for daily routine scanning, such as the authorization to save protocols and adds provisions to secure the user interface based on a manual lock. Contains the functionality for use in a facility’s quality assurance program such as capturing operator and patient information as well as information related to saved changes in protocols.
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NEMA XR 27-2013 with Amendment 1
X-ray Equipment for Interventional Procedures User Quality Control Mode
Applies to x-ray equipment intended to perform interventional procedures and defines a set of minimum set of requirements designed to more easily facilitate quality control at the facility level.
$152
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NEMA XR 28-2013
Supplemental Requirements for User Information and System Function Related to Dose in CT
Identifies uniform and standardized manufacturer’s information provided to users of a CT scanner. This information includes perfusion scanning, use of Automatic Exposure Control, organization of dose-related information, a requirement for listing the reference protocols shipped on a CT system.
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NEMA XR 29-2013
Standard Attributes on CT Equipment Related to Dose Optimization and Management
Identifies four key features of CT scanners which contribute to or help perform optimization and or management of doses of ionizing radiation while still enabling the system to deliver the diagnostic image quality needed by the physician.
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NEMA XR 31-2016
Standard Attributes on X-ray Equipment for Interventional Procedures
Offers healthcare providers a reference to identify key features which contribute to enhanced patient care and to help manage patient radiation dose delivery, while still enabling the system to provide sufficient image quality needed by the physician.
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NEMA/MITA 1-2015
Good Refurbishment Practices for Medical Imaging Equipment
Lays out the basic requirements for a refurbishment process for medical electrical equipment which will not change the equipment’s original intended use, safety profile, or performance.
$0
Buy Now

NEMA/MITA CSP 1-2016
Cybersecurity for Medical Imaging
Addresses how cyber threats pose a significant risk to patient safety, clinical and business continuity in the practice of medical imaging, and why a combination of people, processes, and technologies is required to mitigate these risks. Originally published November 4, 2015.
$0
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NEMA/MITA DICOM
Digital Imaging and Communications in Medicine (DICOM)
DICOM (Digital Imaging and Communications in Medicine) enables the transfer of medical images in a multi-vendor environment and facilitates the development and expansion of picture archiving and communication systems. DICOM standards are available for download at no charge at ftp://medical.nema.org/dicom.

$0

NEMA/MITA XE P1-2018
Modification of Image Displays of Interventional X-ray Equipment: Issues to be Considered
Gives stakeholders (including regulators, facility administrators, radiologists, medical doctors, and medical physicists) information on some of the issues and associated risks with the use of non-validated third-party image displays.

$0

NEMA/MITA XR 30-2016
Quality Control Tools for Digital Projection Radiography
Defines a set of minimum equipment requirements that facilitate the quality control of digital projection radiography by healthcare providers.

$0

NEMA/MITA WP 1-2017
Computed Tomography Image Quality (CTIQ): Low-Contrast Detectability (LCD) Assessment When Using Dose Reduction Technology
Gives stakeholders such as regulators, radiologists, medical doctors, CT technologists, and medical physicists an overview of the current techniques and tools (phantoms) that MITA has utilized to assess low contrast detectability (LCD) as a function of radiation dose.

$0

NEMA/MITA WP 1-2016
Motors & Generators

Type 2 Motor Starter Protection Fuse Guide
Covers attainment of Type 2 Coordination (No-Damage Protection). IEC- and NEMA-type devices may be tested to meet IEC 947-4-1 and UL 508E (Outline of Investigation), which differentiate between two types of coordination, or damage, levels Type 1 and Type 2.

$0

NEMA HVM S1-2018
High Voltage and Medium Voltage Motors
NEMA and CEMEP released a joint statement on risks of developing mandatory regulations related to Medium and High Voltage motors.

$0

ANSI/NEMA C50.41-2012
American National Standard for Polyphase Induction Motors for Power Generation Stations
Applies to polyphase induction motors intended for use in power-generating stations, including the following frame size larger than 440 series, squirrel cage type, single speed or multispeed, horizontal or vertical construction and form wound.

$82

NEMA MG 1-2011 Condensed Information Guide for General Purpose Industrial AC Small and Medium Squirrel-Cage Induction Motor Standards
Provides a condensation of NEMA Motors and Generators, MG 1-2011. Some sections are reprinted in their entirety while others have been combined or abbreviated.

$150

NEMA MG 1-2016
Motors and Generators
Assists users in the proper selection and application of motors and generators. Contains practical information concerning performance, safety, testing, and construction and manufacture of ac and dc motors and generators. Click here to purchase a network CD.

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NEMA ICS 7.2-2015
Application Guide for AC Adjustable Speed Drive Systems
Assists users in proper selection and application of AC adjustable speed drive systems. It covers AC electrical drive systems rated 600 V or less, consisting of three-phase induction motors, voltage-source pulse-width modulated adjustable frequency controls, and associated components. It also addresses common issues that should be considered in the selection of drive system components and the installation and application of the drive system.

$152

NEMA ICSP 10.1-2015
Clarification of Requirements for Service-rated Transfer Switches
Developed to clarify National Electrical Code® requirements for service-rated transfer switches.

$0

NEMA ICS 7.1-2015
Application Guide for AC Motors

NEMA MGRD 1-2016
Powering Microgrids for the 21st-Century Electrical System
Introduces the concept of microgrids as an integral component of the power delivery system of the 21st century.

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### NEMA MG 2-2014
Safety Standard for Construction and Guide for Selection, Installation and Use of Electric Motors and Generators
Provides recommendations for the selection, installation and use of rotating electric machines so as to provide for the practical safeguarding of persons and property.
$114

Sound Level Prediction for Installed Rotating Electrical Machines
Provides a method for estimating sound pressure levels of installed rotating electrical machines.
$68

### NEMA MG 10-2017
Energy Management Guide for Selection and Use of Fixed Frequency Medium AC Squirrel-Cage Polyphase Induction Motors
Provides practical information concerning proper selection and application of polyphase induction and synchronous motors, including installation, operation and maintenance.
$96

Energy Management Guide for Selection and Use of Single-Phase Motors
Provides practical information concerning the proper selection and application of single-phase motors, including installation, operation and maintenance.
$51

### NEMA MG SET
Motors & Generators Set
Provides the most complete and concise reference material available relative to the practical applicability of ac and dc motors and generators. This includes whether they are single phase, polyphase induction, or of the synchronous variety, including performance characteristics such as required levels of efficiency and sound pressure levels, as well as recommendations for their proper selection, installation, operation and maintenance. Set includes MG 1, MG 2, MG 3, MG 10, MG 11.
$658

### NEMA Premium
General Specification for Consultants, Industrial and Municipal NEMA Premium® Efficiency Electric Motors (600 V or Less)
Outlines the minimum requirements for three-phase ac induction motors applied to municipal and industrial applications for operation on voltages 600 V or less, rated 500 hp or less, operating more than 2,000 hours per year at greater than 75 percent of full load.
$61

### NEMA SEM S1-2018
Small Electric Motors
NEMA and CEMEP released a joint statement on benefits of system efficiency instead of component efficiency when considering future regulations for small motors.
$0

### NEMA SM 1-2017
Guide to General-Purpose Synchronous Motors without Excited Rotor Windings
Covers general-purpose synchronous motors without excited rotor windings, including polyphase alternating-current permanent magnet motors rated 500 horsepower and less.
$299

### Electrical Installation Requirements: A Global Perspective
Presents a study of NFPA 70 and IEC 60364.
$323

### Green Marking of Lamps
Explains green markings, including green lamp etches or green component materials used in lamps, which indicate that the marked lamps consistently pass the U.S. Federal EPA Toxicity Characteristic Leaching Procedure for all substances that were regulated at the time of lamp manufacture.
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Market Benefits of Electric Resistance Heat
Provides an overview of recent developments in the world of electric resistance heating. It includes a high-level exploration of the different types of electric heating options; a review of common attributes, including its comfort, efficiency, and flexibility of use; and a case study of electric heat used in “green” homes.
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American National Standard for Gas Tube Surge Arresters on Wire Line Telephone Circuits
Applies to gas tube arresters used for the limitation of voltage surges due to lightning or power disturbances on wire line telephone facilities.

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ANSI C80.1-2015
American National Standard for Electric Rigid Steel Conduit
Establishes the requirements for electrical rigid steel conduit for use as a raceway for wires or cables of an electrical system. Raceway systems (conduit, fittings, and enclosures) are relied upon to provide mechanical protection for circuit conductors and to carry potentially dangerous fault currents.

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NEMA PRP 1-2014
Guidelines for Conduit-in-Casing Construction
Presents conduit-in-casing construction as a technically sound solution to the problem of laying power/communication cables under a surface obstruction (highway, runway, rail bed, river, etc.) without disrupting traffic roadbed, rail bed or riverbed.

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Installation Guidelines for Surface Nonmetallic Raceway
Provides information on the proper application and installation of surface nonmetallic raceway permitted for use in dry locations, non-hazardous locations, and areas not subject to physical abuse, in accordance with the National Electrical Code® (NEC) and the Canadian Electrical Code (CE Code), Part I.
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Aboveground Reinforced Thermosetting Resin Conduit and Fittings
Replaces the portions of TC 14-2002 relevant to aboveground RTRC and fittings and includes an annex on engineering data calculations not included in binational standard. The entire NEMA TC 14 Series can be purchased at a discount.

NEMA TC 14.BG-2015
Belowground Reinforced Thermosetting Resin Conduit and Fittings
Replaces the portions of TC 14-2002 relevant to aboveground RTRC and fittings and includes an annex on engineering data calculations not included in binational standard. The entire NEMA TC 14 Series can be purchased at a discount.

NEMA TC 14.XW-2015
Extra Heavy Wall Aboveground Reinforced Thermosetting Resin Conduit and Fittings
Replaces the portions of TC 14-2002 relevant to XW RTRC and fittings and includes an annex on engineering data calculations not included in binational standard. The entire NEMA TC 14 Series can be purchased at a discount.

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Applies to surface-type control thermostats and temperature limiting controls for electric storage water heaters.
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**Residential Controls—Class 2 Transformers**
Covers Class 2 transformers intended primarily for use in 30 V rms maximum low-voltage residential control circuits. It includes definitions, electrical ratings, performance standards, mounting dimensions, and marking requirements.
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### Safety

<table>
<thead>
<tr>
<th>Standard</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSI Z535.2-2011 (R2017)</td>
<td>American National Standard for Environmental and Facility Safety Signs</td>
<td>Regulates requirements for the design, application, and use of safety signs in facilities and in the environment through consistent visual layout. Reorganized to best describe the five types of safety signs used in facilities, the 2011 edition of this standard is revised to better harmonize with ANSI Z535.4, ANSI Z535.5, and ANSI Z535.6.</td>
</tr>
<tr>
<td>ANSI Z535.3-2011 (R2017)</td>
<td>American National Standard for Criteria for Safety Symbols</td>
<td>Provides general criteria for the design, evaluation, and use of safety symbols to identify and warn against specific hazards and information to avoid personal injury.</td>
</tr>
<tr>
<td>ANSI Z535.4-2011 (R2017)</td>
<td>American National Standard for Product Safety Signs and Labels</td>
<td>Delivers specifications for design, application, use, and placement of safety signs and labels on a wide variety of products. A new type of product safety sign, the “safety instruction sign,” was added to join the existing types of signs, hazard alerting signs, and safety notice signs, which were also more clearly defined and named in this edition. The definitions for “accident,” “harm,” and “incident” were refined to more clearly delineate a separation between physical injury and other safety-related issues (e.g., property damage). It was revised to correspond with ANSI Z535.2, ANSI Z535.5, ANSI Z535.6.</td>
</tr>
<tr>
<td>ANSI Z535.5-2011 (R2017)</td>
<td>American National Standard for Safety Tags and Barricade Tapes (for Temporary Hazards)</td>
<td>Discusses tag and tapes, which are used only until the identified hazard is eliminated or the hazardous operation is completed. The Z535.5-2011 edition was revised to link with ANSI Z535.2, ANSI Z545.4, and ANSI Z535.6. The Safety Instructions Tag was added in addition to the existing types of signs, hazard alerting tags, and barricade tapes, as well as safety notice tags and barricade tapes, which were more clearly defined and named in this edition.</td>
</tr>
<tr>
<td>ANSI Z535.6-2011 (R2017)</td>
<td>American National Standard for Product Safety Information in Product Manuals, Instructions and Other Collateral Materials</td>
<td>Sets forth requirements for the design and location of product safety messages in collateral materials for a variety of products.</td>
</tr>
<tr>
<td>NEMA GD 1-2016</td>
<td>Evaluating Water-Damaged Electrical Equipment</td>
<td>Provides advice on the safe handling of electrical equipment that has been exposed to water. Outlines items that will require complete replacement or that can be reconditioned by a trained professional. Equipment covered includes electrical distribution equipment, motor circuits, power equipment, transformers, wire, cable and flexible cords, wiring devices, GFCIs and surge protectors, lighting fixtures and ballasts, motors and electronic products.</td>
</tr>
</tbody>
</table>
NEMA GD 2-2016
Evaluating Fire- and Heat-Damaged Electrical Equipment
Provides information on how to evaluate electrical equipment that has been exposed to heat and fire residue through fire, firefighting activities, or close proximity to a fire. It is designed for use by suppliers, installers, inspectors, and users of electrical products.
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NEMA WT 1-2018
Wireless Communications Technology for Fire and Life Safety Systems
Provides a brief overview of wireless technology currently available and how it impacts the life safety industry today.
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Supply Chain Security

NEMA CPSP 1-2015
Supply Chain Best Practices
Identifies a recommended set of supply chain best practices and guidelines that electrical equipment and medical imaging manufacturers can implement during product development to minimize the possibility that bugs, malware, viruses, or other exploits can be used to negatively impact product operation. As opposed to being an all-inclusive document, it is a representation of identified best practices that vendors can implement as they develop, manufacture, and deliver products as part of the supply chain.
$0

NEMA CPSP 2-2018
Cyber Hygiene Best Practices
Identifies a set of industry best practices and guidelines for electrical equipment and medical imaging manufacturers to help raise their level of cybersecurity sophistication in their manufacturing facilities and engineering processes.
$0

NEMA IOTP 1-2018
Standby Power of Connected Devices and the Internet of Things
Explores the conflict between limitations on what is commonly referred to as standby power and the potential services and benefits of connected devices in the Internet of Things (IoT) and Industrial Internet of Things (IIoT).
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Transporters

Safety Labels for Pad-Mounted Switchgear and Transformers Sited in Public Areas
Details the labeling used on pad-mounted switchgear and transformers sited in public areas adjacent to residential properties, shopping centers and schools. May be used for equipment sited in utility or industrial properties that are not normally accessible to the general public. Contains Mr. Ouch labels.
$64

NEMA ST 20-2014
Dry Type Transformers for General Applications
Applies to single-phase and polyphase dry type transformers (including both autotransformers and noncurrent limiting reactors) for supplying energy to power, heating, and lighting circuits.
$89

NEMA TR 1-2013
Transformers, Regulators and Reactors
Includes certain NEMA standard test methods, test codes and properties of liquid-immersed transformers, regulators and reactors that are not ANSI standards. Provides a list of all ANSI CS7 standards that have been approved by NEMA.
$69

Traffic Control Systems (Not Recommended for New Designs)
Defines traffic-signaling equipment used to facilitate and expedite the safe movement of vehicular and pedestrian traffic. This standard has been reaffirmed to make it available for support of legacy traffic-control equipment. For new equipment installations, use TS 2.
$155

NEMA TS 2-2003, Amendment 3
Contactor Amendment
Modifies Figure 5-4, and Section 5.4.2.3, and adds a new Section 5.4.3.2.1.
$0

NEMA TS 2-2003, Amendment 4
Flashing Yellow Arrow (FYA) Amendment
Revises NEMA TS 2-2003 (R2008) in four places to address Flashing Yellow Arrow (FYA), specifically by assigning a bit as “FYA Flash Rate Failure; including language addressing FYA operation; and including language addressing FYA and MMUs.
$0

NEMA TS 2-2016
Traffic Controller Assemblies with NTCIP Requirements—Version 03.07
Covers traffic signaling equipment used to facilitate and expedite the safe movement of pedestrians and vehicular traffic. Incorporates the “Flashing Yellow Arrow” feature, as well as associated configuration, pin assignment, and other related information. A list of revisions from NEMA TS 2-2003 (R2008) is included.
$305

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NEMA TS 4-2016
Hardware Standards for Dynamic Message Signs (DMS) with NTCIP Requirements
Provides the user with safe, dependable, functional and easily maintained DMS equipment. The requirements of this standard were developed by industry consensus, taking into account current user needs, available commercial technologies, engineering research, traffic engineering applications, human factors engineering and engineering judgment. The revisable Clause 11.5, Conformance Table Excerpt, is available to assist with developing procurement documents based on this standard.
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NEMA TS 5-2017
Portable Traffic Signal Systems (PTSS) Standard
Covers traffic signaling equipment used to enable and expedite the safe movement of vehicle traffic and the work that goes on in a work zone.
$145
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NEMA TS 8-2018
Cyber and Physical Security for Intelligent Transportation Systems (ITS)
Allows agencies and other transportation infrastructure owner/operators to implement cyber- and physical-security for the intelligent transportation system (ITS) portion of for surface transportation systems.
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NTCIP 1102:2004
Octet Encoding Rules (OER) Base Protocol
Defines the presentation layer data encoding rules used in conjunction with application layer protocols defined in other standards. Serves as a replacement for part of NTCIP 1101, but defines additional features.
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NTCIP 1103 v03
Transportation Management Protocols (TMP)
Defines a composite application layer protocol for ITS devices, consisting of three component protocols SNMP, SFMP and STMP.
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NTCIP 1104 v01
Center-to-Center Naming Convention Specification
Defines the naming service for common object request broker architecture (CORBA) for use in center-to-center communications in the transportation domain, and lists the requirements for establishing names for management systems and for the objects managed by those systems. May also be referenced by non-CORBA standards to define how certain items should be named.
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NTCIP 1201 v03
Global Object (GO) Definitions
Identifies and defines object definitions that may be supported by multiple device types (e.g., actuated signal controllers and variable message signs). The grouping of objects for a given device type is performed in the device type–specific object definition standard.
$153
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NTCIP 1202:2005
Object Definitions for Actuated Traffic Signal Controller (ASC) Units—Version 02
Identifies and defines object definitions that may be supported by an ASC.
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NTCIP 1203 v03
Object Definitions for Dynamic Message Signs (DMS)
Defines requirements, data elements and conformance requirements applicable to all NTCIP DMS. Data elements are defined using the Simple Network Management Protocol (SNMP) object-type format as defined in RFC1212 and would typically be exchanged using one of the NTCIP-recognized application layers (e.g., SNMP). Formerly TS 3.6. NTCIP 1203 v03 now includes Test Procedures (Annex C). This is a revision of NTCIP 12032011.
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NTCIP 1204 v03
Environmental Sensor Station (ESS) Interface Protocol
Provides definitions of data elements for use with ESS. NTCIP 1204 v03 now includes Test Procedures in Annex C.
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NTCIP 1205:2001
Object Definitions for Closed-Circuit Television (CCTV) Camera Control
Defines objects that are specific to CCTV and standardized object groups that can be used for conformance statements. Limited to the functionality related to CCTV camera control within a transportation environment.
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**NTCIP 1206:2005**
Object Definitions for Data Collection and Monitoring (DCM) Devices
Defines data elements used for the configuration control and status monitoring of transportation data collection devices. The scope of this document is limited to the functionality related to DCMs used within a transportation environment.

**NTCIP 1207 v02**
Object Definitions for Ramp Meter Control (RMC) Units
Defines communication protocol for ramp metering control (RMC) units. Communicating together, RMC units detect both traffic on the main roadway and queued traffic preparing to enter the main roadway, optimizing traffic flow for both. RMC units include a field controller, its suite of sensors, and its warning signs and signals, as well as main roadway and queue detection stations.

**NTCIP 1208:2005**
Object Definitions for Closed-Circuit Television (CCTV) Switching
Defines data elements specific to CCTV switches and standardized data element groups that can be used for conformance statements. Limited to the functionality related to CCTV switches within a transportation environment.

**NTCIP 1209 v02**
Object Definitions for Transportation Sensor Systems (TSS)
Defines data elements used to monitor and control TSS devices for detecting and communicating certain traffic parameters. Describes a zone, virtual zone and sensor, and how zones can be grouped.

**NTCIP 1210 v01**
Field Management Stations (FMS)—Part 1: Object Definitions for Signal System Masters (SSM)
Defines communication requirements among some elements of a traffic management system, specifically the green, yellow, and red indications at a local intersection; a signal system master (also called a “field master,” managing traffic indications at about two to ten nearby, local intersections); and a Traffic Management Center, responsible for traffic management in a wider geographic area.

**NTCIP 1211 v02**
Object Definitions for Signal Control and Prioritization (SCP)
Includes requirements for communication and management of multiple requests for priority or preferential treatment of different classes of vehicles, such as transit or emergency service, among others. NTCIP 1211 v02 defines a method of granting priority to one signal while maintaining coordination with adjacent intersections. NTCIP 1211 v02 includes User Needs, Functional Requirements, and a Protocol Requirements List (PRL). NTCIP 1211 v02 also addresses “absolute time” as a request parameter.

**NTCIP 1213 v02**
Object Definitions for Electrical and Lighting Management Systems (ELMS)
Provides object definitions for communication between a Traffic Management Center (TMC) and ELMS devices (a roadside luminaire and its sensors, for example), to control or monitor various functions, including dimming; light-activated, scheduled or manual operation; or power meter measurement.

**NTCIP 2101:2001**
Point to Multi-Point Protocol Using RS-232 Subnetwork Profile
Applies to transportation-related devices that operate in a typical primary/secondary configuration where one device is the designated primary while one or more other devices are connected to one channel acting as secondaries. As a subnetwork profile, specifies a set of protocols and standards applicable to the data link and physical layers of the Open Systems Interconnection (OSI) Basic Reference Model.

**NTCIP 2102:2003**
Point to Multi-Point Protocol Using FSK Modem Subnetwork Profile
Applies to transportation-related devices that operate in a typical primary/secondary configuration where one device is the designated primary while one or more other devices are connected to one channel acting as secondaries.

**NTCIP 2103 v02**
Point-to-Point Protocol over RS-232 Subnetwork Profile
Applies to transportation-related devices that operate in a point-to-point configuration where exactly two devices (peers) are connected by a logical physical layer communications link. As a subnetwork profile, specifies a set of protocols and standards applicable to the data link and physical layers of the Open Systems Interconnection (OSI) Basic Reference Model.

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**NTCIP 2104:2003**  
**Ethernet Subnetwork Profile**  
Applies to transportation devices and management systems. Specifies a set of protocols and standards applicable to the data link and physical layers of the Open Systems Interconnection (OSI) Reference Model. Specifies a combination of ISO/IEC standards that collectively provides for connectionless and connection-oriented data link services on a common, shared media.  
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**NTCIP 2201:2003**  
**Transportation Transport Profile**  
Applies to transportation devices and management systems, and specifies a set of procedures applicable to the transport and network layers of the Open Systems Interconnection (OSI) Reference Model. Provides a linking mechanism between the application and subnetwork profiles in non-networked environments.  
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**NTCIP 2202:2001**  
**Internet (TCP/IP and UDP/IP) Transport Profile**  
Applies to transportation-related devices that operate in a typical primary/secondary configuration where one device is the designated primary while one or more other devices are connected to one channel acting as secondaries. As a subnetwork profile, specifies a set of protocols and standards applicable to the data link and physical layers of the Open Systems Interconnection (OSI) Basic Reference Model.  
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**NTCIP 2301 v02**  
**Simple Transportation Management Framework (STMF) Application Profile (AP) (AP-STMF)**  
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**NTCIP 2302:2001**  
**Trivial File Transfer Protocol Application Profile**  
Applies to traffic control and transportation-related devices that must operate in an Intelligent Transportation System.  
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**NTCIP 2303:2001**  
**File Transfer Protocol Application Profile**  
Applies to traffic control and transportation devices. Specifies a set of protocols and standards for the application, presentation and session layers of the Open Systems Interconnection (OSI) Basic Reference Model, for block or file transfers to or from roadside devices.  
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**NTCIP 2304:2002**  
**Application Profile for DATEX-ASN (AP-DATEX)**  
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**Application Profile for XML Message Encoding and Transport in ITS Center-to-Center Communications**  
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**Profile Framework**  
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**Structure and Identification of Management Information (SMI)**  
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**NTCIP 8005 v01**  
**Procedures for Creating Management Information Base (MIB) Files**  
Defines processes to verify the correctness of a MIB in NTCIP data dictionary standards, and to prepare a stand-alone version of the MIB. Covers policies and procedures for MIB development and maintenance. Defines requirements for use by NTCIP data stewards in checking MIBs, coordinating all NTCIP device data dictionaries and working with other entities using NTCIP MIBs.  
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Testing and Conformity Assessment Documentation within NTCIP Standards Publications
Defines requirements to be used by NTCIP working groups in producing test documentation as part of the NTCIP standards process.
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Wire & Cable

User Guide to Product Specifications for Electrical Building Wire and Cable
Lists commonly used electrical building wire and cable and the applicable U.S. standards recognized by the NEC®.
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Supplement
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American National Standard for Uninsulated Conductors—Used in Electrical and Electronic Applications
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NEMA MW 785-2000 (R2006, R2011)
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www.wheatland.com

Flexible Metal Conduit

AFC Cable Systems, Inc., a part of Atkore International
www.afcweb.com

Anamet Electrical, Inc.
www.anacondasealtite.com

Electri-Flex Company
www.electriflex.com

Encore Wire Corporation
www.encorewire.com

International Metal Hose Company
www.metalhose.com

Southwire Company
www.southwire.com

Distribution Automation

ABB Inc.
www.abb.com

Eaton
www.eaton.com/electricalusa

G&W Electric Company
www.gwelec.com

GE Grid Solutions
www.gegridsolutions.com

Honeywell Smart Energy
www.elsterelectricity.com
### Electric Resistance Heating

- **Emerson**
  - www.emersonelectric.com
- **Steffes Corporation**
  - www.steffes.com/off-peak-heating
- **STELPRO**
  - www.stelpro.com

### Energy Storage Systems

- **ABB Inc.**
  - www.abb.com
- **Construction Innovations, LLC**
  - www.constructioninnovations.com
- **East Penn Manufacturing Company**
  - www.dekabatteries.com
- **Eaton**
  - www.eaton.com/electricalusa
- **GE Digital Energy**
  - www.gedigitalenergy.com
- **GE Grid Solutions**
  - www.gegridsolutions.com
- **Schneider Electric**
  - www.schneider-electric.us
- **Siemens Industry, Inc.**
  - www.usa.siemens.com/industry
- **TE Connectivity**
  - www.te.com
- **Triacta Power Technologies, Inc.**
  - www.triacta.com
- **Universal Electric Corporation**
  - www.uecorp.com

### Electric Vehicle Supply Equipment/System

- **ABB Inc.**
  - www.abb.com
- **ChargePoint, Inc.**
  - www.chargepoint.com
- **ClipperCreek, Inc.**
  - www.clippercreek.com
- **General Cable a company of the Prysmian Group**
  - www.generalcable.com
- **Leviton Manufacturing Company, Inc.**
  - www.leviton.com
- **Siemens Industry, Inc.**
  - www.usa.siemens.com/industry
- **Southwire Company**
  - www.southwire.com
- **TE Connectivity**
  - www.te.com
- **Toshiba International Corporation**
  - www.toshiba.com/ind

### Enclosures

- **Adalet, a division of Scott Fetzer**
  - www.adalet.com
- **Allied Moulded Products, Inc.**
  - www.alliedmoulded.com
- **Arlington Industries, Inc.**
  - www.alfittings.com
- **Boltswitch, Inc.**
  - www.boltswitch.com
- **Calpipe Industries, LLC**
  - www.calpipe.com
- **Connector Manufacturing Company, a subsidiary of Burndy, LLC**
  - www.cmclugs.com
- **Eaton**
  - www.eaton.com/electricalusa
- **Emerson Automation Solutions**
  - www.egseg.com
- **Hubbell Incorporated**
  - www.hubbell.com
- **Hubbell Wiegmann, a subsidiary of Hubbell Incorporated**
  - www.hubbell-wiegmann.com
- **Killark, a division of Hubbell, Inc.**
  - www.hubbell-killark.com
<table>
<thead>
<tr>
<th><strong>PRODUCTS &amp; MANUFACTURERS</strong></th>
<th>Fire, Life Safety, Security and Emergency Communications</th>
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<tr>
<td>Milbank Manufacturing Company</td>
<td><a href="http://www.milbankworks.com">www.milbankworks.com</a></td>
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<tr>
<td>nVent Hoffman</td>
<td><a href="http://www.nvent.com">www.nvent.com</a></td>
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<tr>
<td>Rittal Corporation</td>
<td><a href="http://www.rittal.us">www.rittal.us</a></td>
</tr>
<tr>
<td>Robroy Industries, Inc.</td>
<td><a href="http://www.robroy.com">www.robroy.com</a></td>
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<tr>
<td>ROMAC HRC</td>
<td><a href="http://www.breakerhardware.com">www.breakerhardware.com</a></td>
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<tr>
<td>Schneider Electric</td>
<td><a href="http://www.schneider-electric.us">www.schneider-electric.us</a></td>
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<tr>
<td>Siemens Industry, Inc.</td>
<td><a href="http://www.usa.siemens.com/industry">www.usa.siemens.com/industry</a></td>
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<tr>
<td>Snake Tray</td>
<td><a href="http://www.snaketray.com">www.snaketray.com</a></td>
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<tr>
<td>Space Age Electronics, Inc.</td>
<td><a href="http://www.1sae.com">www.1sae.com</a></td>
</tr>
<tr>
<td>ABB Installation Products, Inc.</td>
<td><a href="http://www.tnb.com">www.tnb.com</a></td>
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**Fire, Life Safety, Security and Emergency Communications**

**Audible and Visible Appliances (Non-Fire or Nurse Call Systems)**

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<tr>
<td>Bosch Security Systems</td>
<td><a href="http://www.boschsecurity.us">www.boschsecurity.us</a></td>
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<td>Eaton Cooper Safety</td>
<td><a href="http://www.cooperwheelock.com">www.cooperwheelock.com</a></td>
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<tr>
<td>Fire-Lite Alarms by Honeywell</td>
<td><a href="http://www.firelite.com">www.firelite.com</a></td>
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<tr>
<td>International, Inc.</td>
<td><a href="http://www.gamewell-fci.com">www.gamewell-fci.com</a></td>
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<tr>
<td>Gentex Corporation</td>
<td><a href="http://www.gentex.com">www.gentex.com</a></td>
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<td>Honeywell Building Solutions</td>
<td><a href="https://buildingsolutions.honeywell.com">https://buildingsolutions.honeywell.com</a></td>
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<tr>
<td>HSI Fire &amp; Safety Group LLC</td>
<td><a href="http://www.homesafeguard.com">www.homesafeguard.com</a></td>
</tr>
<tr>
<td>Johnson Controls</td>
<td><a href="http://www.tycosimplexgrinnell.com">www.tycosimplexgrinnell.com</a></td>
</tr>
<tr>
<td>Nest Labs, Inc.</td>
<td><a href="http://www.nest.com">www.nest.com</a></td>
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<td>SDI</td>
<td><a href="http://www.sdifire.com">www.sdifire.com</a></td>
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<td>Siemens Industry, Inc.</td>
<td><a href="http://www.usa.siemens.com/industry">www.usa.siemens.com/industry</a></td>
</tr>
<tr>
<td>USI Electric</td>
<td><a href="http://www.universalsecurity.com">www.universalsecurity.com</a></td>
</tr>
<tr>
<td>Xtralis Inc. (now part of Honeywell)</td>
<td><a href="http://www.xtralis.com">www.xtralis.com</a></td>
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**Fire Protective Signaling Systems, Devices, and Accessories**

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<tr>
<td>Johnson Controls</td>
<td><a href="http://www.tycosimplexgrinnell.com">www.tycosimplexgrinnell.com</a></td>
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<td>Potter Electric Signal Company, LLC</td>
<td><a href="http://www.pottersignal.com">www.pottersignal.com</a></td>
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<td>Siemens Industry, Inc.</td>
<td><a href="http://www.usa.siemens.com/industry">www.usa.siemens.com/industry</a></td>
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<td>Valcom</td>
<td><a href="http://www.valcom.com">www.valcom.com</a></td>
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</table>
Fuses

Eaton’s Bussmann Division
www.cooperbussmann.com

Littelfuse, Inc.
www.littelfuse.com

Mersen Electrical Power
ep-us.mersen.com

Phoenix Contact
www.phoenixcontact.com/usa_home

Grounding Products

Burney, LLC
www.burndy.com

Connector Manufacturing Company, a subsidiary of Burney, LLC
www.cmclugs.com

Galvan Industries, Inc.
www.galvanelectrical.com

Harger Lightning & Grounding
www.harger.com

Hubbell Power Systems
www.hubbellpowersystems.com

ILSCO
www.ilasco.com

Panduit Corporation
www.panduit.com

nVent ERICO
www.ericocom

TE Connectivity
www.te.com

ABB Installation Products, Inc.
http://tnb.abb.com/weareabb/

Healthy Care Communications and Emergency Call Systems

Aiphone Corporation
www.aiphone.com

Cornell Communications, Inc.
www.cornell.com

Crest Healthcare Supply
www.cresthealthcare.com

Curbell Medical Products, Inc.
www.curbellmedical.com

Eaton Lighting Solutions
www.cooperlighting.com

Engineered Electronics, Inc.
www.eeiusa.com

Heritage MedCall, Inc.
www.heritagemedcall.com

Inovonics
www.inovonics.com

Johnson Controls
www.simplexgrinnell.com

Rauland, a division of AMETEK, Inc.
www.rauland.com

RF Technologies, Inc.
www.rft.com

Silversphere, LLC
www.silversphere.com

Tektone Sound & Signal Manufacturing, Inc.
www.tektone.com

Industrial Automation Control Products & Systems

Control/Monitor Switches
ABB Inc.
www.abb.com

Carlo Gavazzi Automation Components
www.gavazzionline.com

Eaton
www.eaton.com/electricalusa

Electro Switch Corporation
www.electroswitch.com

Hubbell Incorporated
www.hubbell.com

Joslyn Clark Controls, Inc.
www.joslynclark.com

Omron Corporation
www.omron.com/oei

Reliance Controls Corporation
www.reliancecontrols.com

Rockwell Automation, Inc.
www.rockwellautomation.com

Schneider Electric
www.schneider-electric.us

WEG Electric Corp.
www.weg.net/us

Tower Manufacturing Corporation
www.towermfg.com

Western Automation R & D Corp.
www.mainsafe.com

www.nema.org
### Motion Control
- **ABB Inc.**
  - www.abb.com
- **Delta Electronics, Inc.**
  - www.delta-americas.com
- **Mitsubishi Electric Automation, Inc.**
  - www.meau.com
- **Omrion Corporation**
  - www.omron.com/oei
- **Rockwell Automation, Inc.**
  - www.rockwellautomation.com
- **Schneider Electric**
  - www.schneider-electric.us
- **SEW-Eurodrive, Inc.**
  - www.seweurodrive.com
- **Siemens Industry, Inc.**
  - www.siemens.com/industry

### Power Electronics
- **ABB Inc.**
  - www.abb.com
- **ABB Installation Products, Inc.**
  - www.tnb.com
- **Ametek Solidstate Controls**
  - www.solidstatecontrolsinc.com
- **APC by Schneider Electric**
  - www.apc.com
- **Construction Innovations, LLC**
  - www.constructioninnovations.com
- **Delta Electronics, Inc.**
  - www.delta-americas.com
- **Eaton**
  - www.eaton.com/electricalusa
- **Liebert Services**
  - www.liebert.com
- **Mitsubishi Electric Automation, Inc.**
  - www.meau.com
- **SolaHD**
  - www.sola-hevi-duty.com
- **Toshiba International Corporation**
  - www.toshiba.com/ind
- **VERTIV**
  - www.vertivco/en-us

### System Elements
- **ABB Inc.**
  - www.abb.com
- **Carlo Gavazzi Automation Components**
  - www.gavazzionline.com
- **Eaton**
  - www.eaton.com/electricalusa
- **Hubbell Industrial Controls, Inc.**
  - www.hubbell-icd.com
- **Mitsubishi Electric Automation, Inc.**
  - www.meau.com
- **Omrion Corporation**
  - www.omron.com/oei
- **Rockwell Automation, Inc.**
  - www.rockwellautomation.com
- **Schneider Electric**
  - www.schneider-electric.us

### Insulating Materials
- **3M Electrical OEM Materials**
  - www.iptllc.net
- **ABB Inc.**
  - www.abb.com
- **Accurate Plastics, Inc.**
  - www.acculam.com
- **Dolph a Von Roll Company**
  - www.dolphins.com
- **DuPont**
  - www.dupont.com
- **ELANTAS PDG, Inc.**
  - www.elantas.com/pdg
- **Iten Industries**
  - www.itemanufacturing.com
- **Mar-Bal, Inc.**
  - www.mar-bal.com
- **Raychem, a product group of TE Connectivity**
  - raychem.te.com
- **Röchling Glastic Composites**
  - www.glastic.com
- **Sumitomo Electric Interconnect Products, Inc.**
  - www.seipusa.com

### Lighting
- **ABB Installation Products, Inc.**
  - www.tnb.com
- **Acuity Brands, Inc.**
  - www.acuitybrandslighting.com
- **Emerson Automation Solutions**
  - www.egse.com
- **Architectural Area Lighting**
  - www.aal.net
- **Atlas Lighting Products, Inc.**
  - www.atlaslightingproducts.com
- **Cree, Inc.**
  - www.cree.com/lighting
- **Eaton Lighting Solutions**
- **Holophane Company an Acuity Brands Company**
  - www.holophane.com
- **Hubbell Lighting Inc.**
  - www.hubbelllighting.com
- **Juno Lighting Group an Acuity Brands Company**
  - www.junolightinggroup.com
- **KIM Lighting**
  - www.kimlighting.com
- **Lithonia Lighting, an Acuity Brands Company**
  - www.lithonia.com
- **Prescolite**
  - www.prescolite.com
- **Progress Lighting**
  - www.progresslighting.com
- **RAB Lighting**
  - www.rabweb.com
- **Satco Products, Inc.**
  - www.satco.com
- **Signify**
  - www.signify.com
<table>
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<tr>
<th>Products &amp; Manufacturers: Lighting</th>
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<tr>
<td><strong>Ballast and Driver</strong></td>
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<tr>
<td>Acuity Brands, Inc.</td>
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<td><a href="http://www.acuitybrandslighting.com">www.acuitybrandslighting.com</a></td>
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<tr>
<td>Advanced Lighting Technologies, Inc.</td>
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<tr>
<td><a href="http://www.adlt.com">www.adlt.com</a></td>
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<tr>
<td>Current, powered by GE</td>
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<td><a href="http://www.currentbyge.com">www.currentbyge.com</a></td>
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<td>Eaton Residential &amp; Wiring Devices Division</td>
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<td><a href="http://www.cooperwiringdevices.com">www.cooperwiringdevices.com</a></td>
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<td>Halco Lighting Technologies</td>
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<td><a href="http://www.halolighting.com">www.halolighting.com</a></td>
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<tr>
<td>Holophane Company an Acuity Brands Company</td>
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<tr>
<td><a href="http://www.holophane.com">www.holophane.com</a></td>
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<tr>
<td>Hubbell Lighting, Inc.</td>
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<tr>
<td><a href="http://www.hubbelllighting.com">www.hubbelllighting.com</a></td>
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<tr>
<td>Leviton Manufacturing Company, Inc.</td>
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<td><a href="http://www.leviton.com">www.leviton.com</a></td>
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<td>Lumileds LLC</td>
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<td><a href="http://www.lumileds.com">www.lumileds.com</a></td>
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<td>Lutron Electronics Company, Inc.</td>
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<td><a href="http://www.lutron.com">www.lutron.com</a></td>
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<td>Osram Sylvania, Inc.</td>
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<td><a href="http://www.sylvania.com">www.sylvania.com</a></td>
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<td>Signify</td>
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<td><a href="http://www.signify.com">www.signify.com</a></td>
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<td>TCP International Holdings Ltd.</td>
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<td><a href="http://www.tcpi.com">www.tcpi.com</a></td>
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<td><strong>Dual-Lite</strong></td>
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<td><a href="http://www.dual-lite.com">www.dual-lite.com</a></td>
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<td><strong>Eaton Residential &amp; Wiring Devices Division</strong></td>
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<td><strong>Juno Lighting Group an Acuity Brands Company</strong></td>
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<td><a href="http://www.junolightinggroup.com">www.junolightinggroup.com</a></td>
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<td><strong>Lithonia Lighting, an Acuity Brands Company</strong></td>
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<td><a href="http://www.lithonia.com">www.lithonia.com</a></td>
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<td><strong>O-Z/Gedney</strong></td>
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<td><a href="http://www.o-zgedney.com">www.o-zgedney.com</a></td>
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<td><strong>Prescolite</strong></td>
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<td><a href="http://www.prescolite.com">www.prescolite.com</a></td>
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<td><strong>RAB Lighting</strong></td>
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<td><a href="http://www.cree.com/lighting">www.cree.com/lighting</a></td>
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<td><strong>Floodlighting</strong></td>
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<td>Prescolite</td>
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<td><a href="http://www.rabweb.com">www.rabweb.com</a></td>
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<td>Satco Products, Inc.</td>
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<td>Signify</td>
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<td><strong>Indoor Lighting</strong></td>
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<td>ABB Installation Products, Inc.</td>
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<td>Acuity Brands, Inc.</td>
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<td><a href="http://www.acuitybrandslighting.com">www.acuitybrandslighting.com</a></td>
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<td>Architectural Area Lighting</td>
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<td><a href="http://www.aal.net">www.aal.net</a></td>
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<td>Atlas Lighting Products, Inc.</td>
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<td>Cree, Inc.</td>
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<tr>
<td>Emerson Automation Solutions</td>
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<td><a href="http://www.egseg.com">www.egseg.com</a></td>
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<tr>
<td>GE Lighting</td>
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<td><a href="http://www.gelighting.com">www.gelighting.com</a></td>
</tr>
<tr>
<td>Holophane Company an Acuity Brands Company</td>
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<td><a href="http://www.holophane.com">www.holophane.com</a></td>
</tr>
</tbody>
</table>
PRODUCTS & MANUFACTURERS: Lighting

Hubbell Lighting, Inc.
www.hubbelllighting.com

Intense Lighting A Leviton Company
www.intenselightning.com

Juno Lighting Group an Acuity Brands Company
www.junolightinggroup.com

KIM Lighting
www.kimlighting.com

LEDVANCE LLC
www.sylvania.com

Lithonia Lighting, an Acuity Brands Company
www.lithonia.com

MaxLite
www.maxlite.com

Prescolite
www.prescolite.com

Progress Lighting
progresslighting.com

RAB Lighting
www.rabweb.com

Satco Products, Inc.
www.satco.com

Signify
www.signify.com

StandardPro
www.standardpro.com

TCP International Holdings Ltd.
www.tcpi.com

Universal Lighting Technologies
www.unvlt.com

Lampholders
BJB Electric L.P.
www.bjb.com

Eaton Residential & Wiring Devices Division
www.cooperwiringdevices.com

Hubbell Incorporated Wiring Device-Kellems
www.hubbell-wiring.com

Leviton Manufacturing Company, Inc.
www.leviton.com

Pass & Seymour by Legrand
www.passandseymour.com

TE Connectivity
www.te.com

Light Source
Advanced Lighting Technologies, Inc.
www.adlt.com

Cree, Inc.
www.cree.com

Dialight
www.dialight.com

Eaton Residential & Wiring Devices Division
www.cooperwiringdevices.com

EiKO Global, LLC
www.eikocom

EYE Lighting International of North America, Inc.
www.eyelighting.com

Feit Electric Company, Inc.
www.feit.com

Finally Bulb Light Company, a part of Lucidity Lights, Inc.
www.finallybulbs.com

GE Lighting
www.gelighting.com

Halco Lighting Technologies
www.halcolighting.com

LEDVANCE LLC
www.ledvance.com

Lumileds, LLC
www.lumileds.com

Lutron Electronics Company, Inc.
www.lutron.com

MaxLite
www.maxlite.com

OSRAM Opto Semiconductors GmbH
www.osram-os.com

Osram Sylvania, Inc.
www.sylvania.com

OttLite Technologies, Inc.
www.ottlite.com

Signify
www.signify.com

Satco Products, Inc.
www.satco.com

StandardPro
www.standardpro.com

TCP International Holdings Ltd.
www.tcpi.com

Universal Lighting Technologies
www.unvlt.com

Usiho America, Inc.
www.usiho.com

Venture Lighting International
www.venturelighting.com

Westinghouse Lighting
www.westinghouse.com

Lighting Control Devices
Eaton Residential & Wiring Devices Division
www.cooperwiringdevices.com

Enerlites Inc.
www.enerlites.com

Leviton Manufacturing Company, Inc.
www.leviton.com

Lutron Electronics Company, Inc.
www.lutron.com

Pass & Seymour by Legrand
www.passandseymour.com

Schneider Electric
www.schneider-electric.us

WattStopper
www.wattstopper.com

Lighting Controls
Acuity Brands, Inc.
www.acuitybrandslighting.com

Eaton Residential & Wiring Devices Division
www.coopercontrol.com
<table>
<thead>
<tr>
<th>PRODUCT CATEGORY</th>
<th>MANUFACTURER</th>
<th>WEBSITE</th>
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<tr>
<td>Architectural Area Lighting</td>
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<tr>
<td>Emerson Automation Solutions</td>
<td><a href="http://www.egse.com">www.egse.com</a></td>
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<td>EYE Lighting International of North America, Inc.</td>
<td><a href="http://www.eyelighting.com">www.eyelighting.com</a></td>
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<td>Juno Lighting Group an Acuity Brands Company</td>
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<td>KIM Lighting</td>
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<td>Lithonia Lighting, an Acuity Brands Company</td>
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<td>MaxLite</td>
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<td>Prescolite</td>
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<td>Progress Lighting</td>
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**Outdoor Lighting**

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<td>Westgate MFG Inc.</td>
<td><a href="http://www.westgatemfg.com">www.westgatemfg.com</a></td>
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<td>Remote Illumination Lighting</td>
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<td>Specialty Lighting</td>
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Cree, Inc.
www.cree.com/lighting

Dual-Lite
www.dual-lite.com

Eaton Lighting Solutions
www.cooperlighting.com

Emerson Automation Solutions
www.egseg.com

Holophane Company an Acuity Brands Company
www.holophane.com

Hubbell Lighting, Inc.
www.hubbelllighting.com

Juno Lighting Group an Acuity Brands Company
www.junolightinggroup.com

KIM Lighting
www.kimlighting.com

LEDVANCE LLC
www.ledvance.com

Litetronics International, Inc.
www.litetronics.com

Lithonia Lighting, an Acuity Brands Company
www.lithonia.com

Prescolite
www.prescolite.com

RAB Lighting
www.rabweb.com

Signify
www.signify.com

Low Voltage Distribution Equipment

ABB Inc.
www.abb.com

Boltswitch, Inc.
www.boltswitch.com

Carling Technologies, Inc.
www.carlingtech.com

Construction Innovations, LLC
www.constructioninnovations.com

Durham Company
www.durhamcompany.com

E+I Engineering USA Corporation
www.e-i-eng.com

Eaton
www.eaton.com/electricalusa

Eaton’s Bussmann Division
www.cooperbussmann.com

Hubbell Incorporated
www.hubbell.com

Hubbell Power Systems
www.hubbellpowersystems.com

Hubbell Wiring Device-Kellems
www.hubbell-wiring.com

Mersen USA Newburyport-MA, LLC
ep-us.mersen.com

Milbank Manufacturing Company
www.milbankworks.com

Post Glover Resistors, Inc.
www.postglover.com

Reliance Controls Corporation
www.reliancecontrols.com

Rockwell Automation, Inc.
www.rockwellautomation.com

Schneider Electric
www.schneider-electric.us

Siemens Industry, Inc.
www.usa.siemens.com/industry

Universal Electric Corporation
www.uecorp.com

Z-Power & Distribution
zppoweranddistribution.com

Low Voltage Surge Protective Devices

ABB Installation Products, Inc.
www.tnb.com

ASCO Power Technologies
www.ascopower.com

CITEL Inc.
www.citel.us

Cooper Power Systems by Eaton
www.cooperpower.com

Cooper Wiring Devices by Eaton
www.cooperwiringdevices.com

Eaton
www.eaton.com/electricalusa

Emerson Automation Solutions
www.egseg.com

Hubbell Power Systems
www.hubbellpowersystems.com

Hubbell Wiring Device-Kellems
www.hubbell-wiring.com

Legrand, North America
www.legrand.us

Leviton Manufacturing Company, Inc.
www.leviton.com

Littelfuse, Inc.
www.littelfuse.com

Mersen Electrical Power
ep-us.mersen.com

MVC-Maxivolt
www.maxivolt.com

Pass & Seymour by Legrand
www.passandseymour.com

nVent ERICO
www.erico.com

Phoenix Contact
www.phoenixcontact.com/usa_home

Raycap, Inc.
www.rayvoss.com

Schneider Electric
www.schneider-electric.us

Space Age Electronics, Inc.
www.1sae.com

SolaHD
www.sola-hevi-duty.com

SSI An ILSCO Company
www.surgesuppression.com

Technology Research, LLC, a Southwire company
www.trci.net

Wiremold Cable Management Products by Legrand
www.wiremold.com
Ge Healthcare
www3.gehealthcare.com

Hitachi Healthcare Americas
www.hitachimed.com

Hologic, Inc.
www.hologic.com

Invivo Corporation
www.invivocorp.com

Imagen
imagen.ai

Iontext Corporation
www.ionetix.com

Jubilant DraxImage, Inc.
www.draximage.com

Konica Minolta Medical Imaging USA Inc.
www.konicaminolta.com/medicalusa

Laitek Inc.
www.laitek.com

Lanteus Medical Imaging, Inc.
www.lanteus.com

Liebel-Flarsheim a wholly owned subsidiary of Guerbet Group
www.guerbet.com/en

lifeIMAGE
www.lifeimage.com

MEDIAN Technologies
www.mediantechologies.com

Medtronic, Inc.
www.medtronic.com

Modus Medical Devices Inc.
modusqa.com

NeuroLogica, a subsidiary of Samsung Electronics
www.neurologica.com

Neusoft Medical Systems, USA, Inc.
www.neusoft.com

Numa, Inc.
www.numa-inc.com

PACSHealth, LLC
www.pacshealth.com

Philips
www.usa.philips.com/healthcare

Piramal Imaging Limited
www.piramal.com/imaging

PKG Inc.
www.pkguis.com

Planmed
www.planmed.com

Samsung Medison
www.samsungmedison.com

Shimadzu Medical Systems USA, a part of Shimadzu Corporation
www.shimadzu.com/med

Siemens Healthineers
usa.healthcare.siemens.com

United Imaging Healthcare
www.united-imaging.com

Varex Imaging
www.vareximaging.com

VISUS Health IT GmbH
www.visus.com

Xoran Technologies, LLC
www.xorantech.com

Zevacor Molecular
www.zevacor.com

Ziehm Imaging, Inc.
www.ziehm.com

Zionexa US
www.zionexa.com

ABB Motors and Mechanical Inc.
new.abb.com/motors-generators

Bluffton Motor Works WEG Group
www.blufftonmotorworks.com

Brook Crompton Americas
www.brookcromptonna.com

Cummins, Inc.
www.cummins.com

Leeson Electric, a Regal brand
www.leeson.com

Marathon Electric
www.marathonelectric.com

Nidec Motor Corporation
www.nidec-motor.com

PRODUCTS & MANUFACTURERS: Motor and Generator
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NORD Gear Corporation
www.nord.com

Regal Beloit Corporation
www.regal-beloit.com

SEW-Eurodrive, Inc.
www.seweurodrive.com

Siemens Industry, Inc.
www.usa.siemens.com/industry

Software Motor Corporation
www.softwaremotorcorp.com

Sterling Electric, Inc.
www.sterlingelectric.com

TECO-Westinghouse Motor Company
www.tecowestinghouse.com

Toshiba International Corporation
www.toshiba.com/ind

WEG Electric Corp.
www.weg.net/us

Nonmetallic Boxes and Covers

ABB Installation Products, Inc.
www.tnb.com

Allied Moulded Products, Inc.
www.alliedmoulded.com

Arlington Industries, Inc.
www.aifittings.com

Eaton’s Crouse-Hinds Business
www.crouse-hinds.com

Emerson Automation Solutions
www.egseg.com

Hubbell Incorporated
www.hubbell.com

Hubbell Wiring Device-Kellems
www.hubbell-wiring.com

Pass & Seymour by Legrand
www.passandseymour.com

TayMac by Hubbell, Inc.
www.taymac.com

Wiremold Cable Management Products by Legrand
www.wiremold.com

Outlet & Switch Boxes

Metallic Boxes and Covers

ABB Installation Products, Inc.
www.tnb.com

Eaton’s Crouse-Hinds Business
www.crouse-hinds.com

Emerson Automation Solutions
www.egseg.com

Hubbell Incorporated
www.hubbell.com

Raco by Hubbell, Inc.
www.hubbell.com/raco/en

Sigma Electric Manufacturing Corporation
www.sigmaelectric.com

TayMac by Hubbell, Inc.
www.taymac.com

Wiremold Cable Management Products by Legrand
www.wiremold.com

Pin & Sleeve

ABB Installation Products, Inc.
www.tnb.com

Bryant Electric, a division of Hubbell, Inc.
www.bryant-electric.com

Crest Healthcare Supply
www.cresthealthcare.com

Eaton Residential & Wiring Devices Division
www.cooperwiringdevices.com

Eaton’s Crouse-Hinds Business
www.crouse-hinds.com

Emerson Automation Solutions
www.egseg.com

Hubbell Wiring Device-Kellems
www.hubbell-wiring.com

Interpower Corporation
www.interpower.com

Power Equipment

Electrical Connector

3M
www.3m.com/electrical

ABB Installation Products, Inc.
www.tnb.com

ASK Products, Inc.
www.ask-power.com

BURNDY, LLC
www.burndy.com

Connector Manufacturing Company, a subsidiary of Burndy, LLC
www.cmclugs.com

Eaton’s Power Systems
www.cooperpower.com

Galvan Industries, Inc.
www.galvanelectrical.com

Harger Lightning & Grounding
www.harger.com

Hubbell Power Systems
www.hubbellpowersystems.com

ILSCO
www.ilasco.com

Melni LLC
www.melniconnectors.com

MELTRIC Corporation
www.meltric.com

MELTRIC
www.meltric.com

Panduit Corporation
www.panduit.com

nVent ERICO
www.ericco.com

Pass & Seymour by Legrand
www.passandseymour.com
Electrical Measuring Equipment
Aclara Meters
www.aclara.com
Brooks Utility Products
www.brooksutility.com
Durham Company
www.durhamcompany.com
Eaton
www.eaton.com
Honeywell Smart Energy
www.elsterelectricity.com
Itron, Inc.
www.itron.com
Landis+Gyr
www.landisgyr.com
Milbank Manufacturing Company
www.milbankworks.com
Radian Research, Inc.
www.radianresearch.com
Schneider Electric
www.schneider-electric.com
Sensus, A Xylem Brand
sensus.com
Siemens Industry, Inc.
www.usa.siemens.com/industry

High Voltage Insulator
Hubbell Power Systems
www.hubbellpowersystems.com
K-Line Insulators, Inc.
www.k-line.net
Lapp Insulators, LLC
www.lappinsulator.com
NGK-Locke Polymer Insulators, Inc.
www.ngk-polymer.com

Raychem, a product group of TE Connectivity
raychem.te.com
PPC USA, Inc.
www.ppcinsulators.com
Victor Insulators, Inc.
www.victorinsulators.com

Surge Arrester
ABB Inc.
www.abb.com
Eaton Residential & Wiring Devices Division
www.cooperpower.com
Hubbell Power Systems
www.hubbellpowersystems.com
Siemens Industry, Inc.
www.usa.siemens.com/industry
TE Connectivity
www.te.com

Polymer Guards
ABB Installation Products, Inc.
www.tnb.abb.com
Hubbell Incorporated
www.hubbell.com
IPEX USA, LLC
www.ipexamerica.com

Polymer Raceway Products
ABB Installation Products, Inc.
www.tnb.com
AFC Cable Systems, Inc., a part of Atkore International
www.afcweb.com
Allied Tube & Conduit, a part of Atkore International
www.allieddeg.us
Anamet Electrical, Inc.
www.anametasealtite.com
Champion Fiberglass, Inc.
www.championfiberglass.com
Electri-Flex Company
www.electriflex.com
FRE Composites
www.frecomposites.com
Hubbell Incorporated
www.hubbell.com
IPEX USA, LLC
www.ipexamerica.com
Panduit Corporation
www.panduit.com
Royal Building Products
www.royalbuildingproducts.com
Southern Pipe, Inc.
www.southern-pipe.com
Southwire Company
www.southwire.com
Underground Devices, Inc.
www.udevices.com
United Fiberglass of America, Inc.
www.unitedfiberglass.com
Wiremold Cable Management Products by Legrand
www.wiremold.com

Thermoplastic Raceway (PVC, Polyethylene, Polyolefin)
ABB Installation Products, Inc.
www.tnb.com
AFC Cable Systems, Inc., a part of Atkore International
www.afcweb.com
Hubbell Incorporated
www.hubbell.com
IPEX USA, LLC
www.ipexamerica.com
Panduit Corporation
www.panduit.com
Royal Building Products
www.royalbuildingproducts.com
Southern Pipe, Inc.
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Underground Devices, Inc.
www.udevices.com
Wiremold Cable Management Products by Legrand
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Receptacles

Bryant Electric
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Eaton Residential & Wiring Devices Division
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Enerlites Inc.
www.enerlites.com

Hubbell Wiring Device-Kellems
www.hubbell-wiring.com

Leviton Manufacturing Company, Inc.
www.leviton.com

Lutron Electronics Company, Inc.
www.lutron.com

Pass & Seymour by Legrand
www.passandseymour.com

Sky Technologies
www.safetyquicklight.com

Wiremold Cable Management Products by Legrand
www.wiremold.com

Residential & Commercial Controls

APCOM, Inc.
www.apcom-inc.com

Braeburn Systems, LLC
www.braeburnonline.com

Honeywell Home and Building Technologies
www.honeywell.com

Therm-O-Disc, a brand of Emerson
www.thermodisc.com

White-Rodgers, a brand of Emerson
www.white-rodgers.com

Security Imaging and Communications

AS&E
www.as-e.com

OSI Systems, Inc.
www.osi-systems.com

Rapiscan Systems
www.rapiscansystems.com

TeleSecurity Sciences, Inc.
www.telesecuritysciences.com

Steel Conduit and Electrical Metallic Tubing

ABB Installation Products, Inc.
www.tnb.com

Allied Tube & Conduit, a part of Atkore International
www.allieded.us

Calpipe Industries LLC
www.calpipe.com

Republic Conduit, a Nucor company
www.republicconduit.com

Robroy Industries, Inc.
www.robroy.com

Western Tube & Conduit Corporation
www.westerntube.com

Wheatland Tube Company
www.wheatland.com

Switches

ABB Installation Products, Inc.
www.tnb.abb.com

Allied Moulded Products, Inc.
www.alliedmoulded.com

Boltswitch, Inc.
www.boltswitch.com

Bryant Electric, a division of Hubbell, Inc.
www.bryant-electric.com

Cooper Wiring Devices by Eaton
www.cooperwiringdevices.com

Eaton
www.eaton.com/electricalusa

Switchgear

ABB Inc.
www.abb.com

ABB Installation Products, Inc.
www.tnb.com

Cleaveland/Price Inc.
www.cleavelandprice.com

Eaton Residential & Wiring Devices Division
www.cooperpower.com

Eaton
www.eaton.com/electricalusa

E+I Engineering USA Corporation
www.e-i-eng.com

Federal Pacific
www.federalpacific.com

G&W Electric, Inc.
www.gwelec.com
GE Grid Solutions
www.gegridsolutions.com

Hitachi T&D Solutions, Inc.
hvbi.hitachi.us

Hubbell Power Systems
www.hubbellpowersystems.com

Mersen Electrical Power
ep-us.mersen.com

ROMAC PCI
www.powercontrolsinc.com

S&C Electric Company
www.sandc.com

Schneider Electric
www.schneider-electric.us

Siemens Industry, Inc.
www.usa.siemens.com/industry

Toshiba International Corporation
www.toshiba.com/ind

Z-Power & Distribution
zpoweranddistribution.com

Transformers

ABB Inc.
www.abb.com

Eaton’s Power Systems
www.cooperpower.com

Eaton
www.eaton.com/electricalusa

Emerson
www.emersonelectric.com

Federal Pacific
www.federalpacific.com

Hammond Power Solutions, Inc.
www.hammondpowersolutions.com

Hubbell Acme
www.acmetransformer.com/en

Jinpan International USA Ltd.
www.jstusa.net

MGM Transformer Company
www.mgm-transformer.com

Mitsubishi Electric Power Products, Inc.
www.meippi.com

PDI
www.pdicorp.com

R.E. Uptegraff Manufacturing Co. LLC
www.uptegraff.com

Schneider Electric
www.schneider-electric.us

SolaHD
www.sola-hevi-duty.com

SPX Transformer Solutions, Inc.
www.spxtransformersolutions.com

VanTran Industries
www.vantran.com

WEG Transformers USA Inc.
www.weg.net/institutional

Transportation Management Systems & Associated Control Devices

Adaptive Micro Systems, LLC
www.adaptivedisplaysolutions.com

Applied Information, Inc.
www.appinfoinc.com

Daktronics
www.daktronics.com/transportation

Eberle Design, Inc.
www.editraffic.com

Horizon Signal Technologies
www.horizonsignal.com

Intelight, Inc.
www.intelight-its.com

John Thomas, Inc.
www.crashcushions.com

Miovision Technologies
miovision.com

Parsons
delcantechnologies.com

Peek Traffic Corporation
www.peektraffic.com

SES America
www.sesamerica.com

Siemens Industry, Inc.
www.usa.siemens.com/industry

Skyline Products
www.skylineproducts.com

Ver-Mac
www.ver-mac.com

Uninterruptible Power (UPS)

Single-Phase UPS
ABB Inc.
www.abb.com

Ametek Solidstate Controls, Inc.
www.solidstatecontrolsinc.com

APC by Schneider Electric
www.apc.com

Delta Products Corporation
www.delta-americas.com

Eaton
www.eaton.com/electricalusa

Emerson Automation Solutions
www.egseg.com

Mitsubishi Electric Automation, Inc.
www.meau.com

SolaHD
www.sola-hevi-duty.com

Toshiba International Corporation
www.toshiba.com/ind

VERTIV Liebert
www.liebert.com

Three-Phase UPS
ABB Inc.
www.abb.com

Ametek Solidstate Controls, Inc.
www.solidstatecontrolsinc.com

APC by Schneider Electric
www.apc.com

Eaton
www.eaton.com/electricalusa

Toshiba International Corporation
www.toshiba.com/ind

VERTIV Liebert
www.liebert.com
PRODUCTS & MANUFACTURERS: Uninterruptible Power (UPS)

Wire & Cable

Building Wire and Cable
AFC Cable Systems, Inc., a part of Atkore International
www.afcweb.com

Anamet Electrical, Inc.
www.anacondasealtite.com

Cerro Wire, LLC
www.cerrowire.com

Colonial Wire & Cable Co., Inc.
colonialwire.com

Copperweld Bi-Metallics, LLC
www.copperweld.com

Electri-Flex Company
www.electriflex.com

Encore Wire Corporation
www.encorewire.com

General Cable a company of the Prysmian Group
www.generalcable.com

International Metal Hose Company
www.metalhose.com

Nexans
www.nexans.ca

Okonite Company, The
www.okonite.com

Service Wire Company
www.servicewire.com

Southwire Company
www.southwire.com

United Copper Industries
www.unitedcopper.com

Viakable, S.A. de C.V.
www.viakable.com

Flexible Cords
Bryant Electric, a division of Hubbell, Inc.
www.bryant-electric.com

Coleman Cable, LLC
www.colemancable.com

Electri-Cord Manufacturing Company
www.electri-cord.com

General Cable a company of the Prysmian Group
www.generalcable.com

Hubbell Wiring Device-Kellems
www.hubbell-wiring.com

Interpower Corporation
www.interpower.com

Leviton Manufacturing Co., Inc.
www.leviton.com

Southwire Company
www.southwire.com

Viakable, S.A. de C.V.
www.viakable.com

High Performance Wire and Cable
AFC Cable Systems, Inc., a part of Atkore International
www.afcweb.com

Cable USA, LLC
www.cableusa.cc

Champlain Cable Corporation
www.champcable.com

Coleman Cable, LLC
www.colemancable.com

Comtran Cable, LLC
comtrancorp.com

Freeport-McMoRan
www.fcx.com

General Cable a company of the Prysmian Group
www.generalcable.com

Marine Tech Wire and Cable, Inc.
www.marinetechwire.com

Monroe Cable Company, Inc., The
www.monroecableusa.com

New England Wire Technologies Corporation
www.newenglandwire.com

Nexans
www.nexans.ca

Okonite Company, The
www.okonite.com

Prestolite Wire, LLC
www.prestoliteewire.com

Quirk Wire Company, Inc.
www.quirkwire.com

Radix Wire
www.radix-wire.com

Raychem, a product group of TE Connectivity
raychem.te.com

RSCC Wire and Cable
www.r-scc.com

Rubadue Wire Co., Inc.
www.rubadue.com

SEA Wire and Cable, Inc.
www.sea-wire.com

Southwire Company
www.southwire.com

Virginia Insulated Products, Inc.
www.vipwire.com

WireMasters, Inc.
www.wiremasters.net

Magnet Wire
CONDUMEX S.A. DE C.V.
www.condumex.com

Elektrisola, Inc.
www.elektrisola-usa.com

Magnekon S.A. de C.V., a Viakable company
www.magnekon.com

MWS Wire Industries
www.mwswire.com

New England Wire Technologies Corporation
www.newenglandwire.com

Rea Magnet Wire Company, Inc.
www.reawire.com

Rubadue Wire Co., Inc.
www.rubadue.com

Superior Essex, Inc.
www.superioressex.com

Virginia Insulated Products, Inc.
www.vipwire.com
Power and Control Cable

AFC Cable Systems, Inc., a part of Atkore International
www.afcweb.com

Electri-Cord Manufacturing Company
www.electri-cord.com

Freeport-McMoRan
www.fcx.com

General Cable a company of the Prysmian Group
www.generalcable.com

Marmon Utility LLC
www.marmonutility.com

Nexans
www.nexans.ca

Okonite Company, The
www.okonite.com

Phoenix Contact
www.phoenixcontact.com/usa_home

RSCC Wire and Cable
www.r-scc.com

Rubadue Wire Co., Inc.
www.rubadue.com

SEA Wire and Cable, Inc.
www.sea-wire.com

Service Wire Company
www.servicewire.com

Southwire Company
www.southwire.com

Wiring Devices

ABB Installation Products, Inc.
www.tnb.com

BJB Electric L.P.
www.bjb.com

Bryant Electric, a division of Hubbell, Inc.
www.bryant-electric.com

Eaton Residential & Wiring Devices Division
www.cooperwiringdevices.com

Enerlites Inc.
www.enerlites.com

Hubbell Incorporated
www.hubbell.com

Hubbell Wiring Device-Kellems
www.hubbell-wiring.com

Interpower Corporation
www.interpower.com

Legrand, North America
www.legrand.us

Leviton Manufacturing Company, Inc.
www.leviton.com

Lutron Electronics Company, Inc.
www.lutron.com

Pass & Seymour by Legrand
www.passandseymour.com

Schneider Electric
www.schneider-electric.us

Sky Technologies
www.safetyquicklight.com

TayMac by Hubbell, Inc.
www.taymac.com

TE Connectivity
www.te.com

Technology Research, LLC, a Southwire company
www.trci.net

Titan3 Technology LLC
www.titan3.com

WattStopper
www.wattstopper.com

Wiremold Cable Management Products by Legrand
www.wiremold.com
### ASSOCIATE MEMBERS

#### Industrial Supplier

Companies that supply raw, manufactured materials, components or products

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<th>Company Name</th>
<th>City</th>
<th>State</th>
<th>Website</th>
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<td>Apple Inc.</td>
<td>Cupertino</td>
<td>CA</td>
<td><a href="http://www.apple.com">www.apple.com</a></td>
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<td>Arkema Inc.</td>
<td>King Prussia</td>
<td>PA</td>
<td><a href="http://www.arkema.com">www.arkema.com</a></td>
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<tr>
<td>Budde Marketing Systems, Inc.</td>
<td>Homer Glen</td>
<td>IL</td>
<td><a href="http://www.buddemarketing.com">www.buddemarketing.com</a></td>
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<td>ELTEK International Laboratories</td>
<td>Saint Charles</td>
<td>MO</td>
<td><a href="http://www.elteklabs.com">www.elteklabs.com</a></td>
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<td>Gendon Polymer Services Inc.</td>
<td>Bolton</td>
<td>ON</td>
<td><a href="http://www.gendon.com">www.gendon.com</a></td>
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<td>Greenlite Lighting Corporation</td>
<td>Pointe Claire</td>
<td>QC</td>
<td><a href="http://www.greenlite.ca">www.greenlite.ca</a></td>
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<td>Jor-Mac Company</td>
<td>Lomira</td>
<td>WI</td>
<td><a href="http://www.jor-mac.com">www.jor-mac.com</a></td>
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<td>Meister International, LLC</td>
<td>Ross</td>
<td>OH</td>
<td><a href="http://www.meisterintl.com">www.meisterintl.com</a></td>
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<td>Newton-Evans Research Company, Inc.</td>
<td>Ellicott City</td>
<td>MD</td>
<td><a href="http://www.newton-evans.com">www.newton-evans.com</a></td>
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<td>Plusrite Electric (Jiangsu) Co., Ltd.</td>
<td>Jiangsu China</td>
<td><a href="http://www.pluslight.com">www.pluslight.com</a></td>
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<td>PPG Industrial Coatings</td>
<td>Pittsburgh</td>
<td>PA</td>
<td>corporate.ppg.com</td>
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<td>Robertson Inc.</td>
<td>Burlington</td>
<td>ON</td>
<td><a href="http://www.robertsonscrew.com">www.robertsonscrew.com</a></td>
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<td>Synaptronics</td>
<td>Columbia</td>
<td>MD</td>
<td><a href="http://www.synaptronics.com">www.synaptronics.com</a></td>
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#### Wholesale Trade

Companies that are authorized to distribute NEMA Member products

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<th>Company Name</th>
<th>City</th>
<th>State</th>
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<tr>
<td>Batteries Plus Bulbs</td>
<td>Hartland</td>
<td>WI</td>
<td><a href="http://www.batteriesplus.com">www.batteriesplus.com</a></td>
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<tr>
<td>Controls &amp; Electric Motor Company Inc.</td>
<td>Joplin</td>
<td>MO</td>
<td><a href="http://www.cemcomo.com">www.cemcomo.com</a></td>
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<td>Medical Outfitters, Inc.</td>
<td>Miami</td>
<td>FL</td>
<td>medicaloutfitter.net</td>
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<tr>
<td>Mission Controls &amp; Automation</td>
<td><a href="http://www.mission-controls.com">www.mission-controls.com</a></td>
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<td>MRO Supply</td>
<td><a href="http://www.mrosupply.com">www.mrosupply.com</a></td>
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<tr>
<td>Rexel Inc.</td>
<td>Dallas</td>
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<td><a href="http://www.rexelusa.com">www.rexelusa.com</a></td>
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<tr>
<td>Stober Drives Inc.</td>
<td>Maysville</td>
<td>KY</td>
<td><a href="http://www.stober.com">www.stober.com</a></td>
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<tr>
<td>Sy Kessler Sales Inc.</td>
<td>Dallas</td>
<td>TX</td>
<td><a href="http://www.sykessler.com">www.sykessler.com</a></td>
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<td>VantagePQ Solutions, LLC</td>
<td>Wake Forest</td>
<td>NC</td>
<td><a href="http://www.vantagepq.com">www.vantagepq.com</a></td>
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<td>Worldwide Electric Corporation</td>
<td>Pittsford</td>
<td>NY</td>
<td><a href="http://www.worldwideelectric.net">www.worldwideelectric.net</a></td>
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#### Association

Organizations that have an interest in NEMA-related issues

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<th>Organization</th>
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<tr>
<td>IMSA</td>
<td>Rockledge</td>
<td>FL</td>
<td><a href="http://www.imsasafety.org">www.imsasafety.org</a></td>
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<tr>
<td>The Vinyl Institute</td>
<td>Alexandria</td>
<td>VA</td>
<td><a href="http://www.vinylinfo.org">www.vinylinfo.org</a></td>
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