



#### SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

## **Global Testing Laboratories**

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# ELECTROMAGNETIC COMPATIBILITY & TELECOMMUNICATIONS

**NVLAP LAB CODE 200409-0** 

### **Emissions**

<b><u>Designation</u></b> EN 12895 (2000)	<u>Description</u> Industrial trucks - Electromagnetic compatibility
EN 12893 (2000)	maustral trucks - Electromagnetic compationity
BS EN 13309 (2000-09)	Construction machinery. Electromagnetic compatibility of machines with internal electrical power supply
EN 13309 (2010-08)	Construction machinery. Electromagnetic compatibility of machines with internal electrical power supply
ISO 13766 (1999)	Earth-moving machinery Electromagnetic compatibility
EN ISO 14982 (1998)	Agricultural and forestry machines - Electromagnetic compatibility - Test methods and acceptance criteria (ISO 14982: 1998)
EN 55011 (2007)	Industrial, scientific and medical (ISM) radio-frequency equipment - Electromagnetic disturbance characteristics - Limits and methods of measurement
EN 55014-1 (2006)	Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
EN 55014-1 (2006) +A1 (2009) +A2 (2011)	Electromagnetic Compatibility Requirements for household appliances, electric tools and similar apparatus - Part 1: Emissions

For the National Voluntary Laboratory Accreditation Program



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EN 55022 (2006)	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
EN 55022 (2006) + A1 (2007)	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
EN 55032 (2015)	Electromagnetic compatibility of multimedia equipment. Emission Requirements
EN 55032 (2012-05)	Electromagnetic compatibility of multimedia equipment. Emission requirements excluding the 5m test distance.
IEC 61000-3-2, Ed. 4.0 (2014-05)	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current <= 16 A per phase)
IEC 61000-3-2, Ed. 3.0 (2005) +A1 (2008) +A2 (2009)	Electromagnetic compatability (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current <=16 A per phase)
EN 61000-3-2 (2006)	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)
IEC 61000-3-3, Edition 1.2 (2005-10)	EMC- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low- voltage supply systems, for equipment with rated current <= 16 A per phase and not subject to conditional connection
EN 61000-3-3, Ed. 2.0 (2008-09)	EMC- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low- voltage supply systems, for equipment with rated current <= 16 A per phase and not subject to conditional connection
IEC 61000-3-3 Ed. 2.0 (2008)	EMC- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current =16 A per phase and not subject to conditional connection
IEC 61000-3-3 Ed. 3.0 (2013-05)	(EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current 16 A per phase and not subject to conditional connection
IEC 61000-3-11, 1st edition (2000-08)	EMC - Part 3-11: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems -Equipment with rated current <=75A and subject to conditional connection
EN 61000-3-11, Rev 01, Feb 2001	Electromagnetic Compatibility (EMC) Limits, Limitation of Voltage Changes, Voltage Fluctuations and Flicker in public low-voltage supply systems - Equipment with rated voltage current < 75 A and subject to conditional connection
IEC 61000-3-12, Rev 04, November 2004	Electromagnetic Compatibility (EMC) - PART 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current greater than 16 A and less than or equal to 75 A
IEC 61000-3-12 Ed. 2.0 (2011)	Electromagnetic compatibility (EMC) - Part 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current $>$ 16 A and $<=$ 75 A per phase



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IEC 61326-1 Ed. 2.0 (2012)	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
EN 61326-2-6 (2013)	Electrical equipment for measurement, control and laboratory use. EMC requirementsParticular requirements. In vitro diagnostic (IVD) medical equipment
AS/NZS 1044 (2001) and A1 (2001)	Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
CNS 13438 (2006) (up to 6GHz)	Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
CNS 13783-1 (2001) and A1 (2001)	Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
CNS 13783-1 (2004)	Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
IEC/CISPR 11 Ed. 6.0 (2015) + A1 (2016)	Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement
IEC/CISPR 11 Ed. 6.0 (2015)	Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement
IEC/CISPR 11 Ed. 5 (2009-05)	Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement
IEC/CISPR 14-1 (2016)	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
AS/NZS CISPR 14.1 (2003)	Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Emission
AS/NZS CISPR 14.1 (2013)	Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Emission
IEC/CISPR 14-1, Ed. 5.1 (2009)	Electromagnetic Compatibility - Requirements for Household Appliances, Electric Tools and Similar Apparatus - Part 1: Emission
IEC/CISPR 14-1, Ed. 5.0 (2005) + A1 (2008) + A2 (2011)	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
IEC/CISPR 22 Ed. 6.0 (2008-09)	Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment
AS/NZS CISPR 22 (2009) +A1 (2010)	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
CISPR 32 (2015)	Electromagnetic compatibility of multimedia equipment - Emission requirements
	Excluding the 5m test distance
AS/NZS CISPR 32 (2013)	Electromagnetic compatibility of multimedia equipment - Emission requirements



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AS/NZS CISPR 32 (2015)	Electromagnetic compatibility of multimedia equipment - Emission requirements
ANSI C63.4 (2014)	Unintentional Radiators in 47 CFR FCC Part 15, Subpart B
ANSI C63.4 (2003)	Unintentional Radiators in 47 CFR FCC Part 15, Subpart B
ANSI C63.4 (2009)	Unintentional Radiators in 47 CFR FCC Part 15, Subpart B
FCC OST/MP-5 (1986)	FCC Methods of Measurement of Radio Noise Emissions for ISM Equipment (cited in 47 CFR FCC Part 18 - Industrial, Scientific, and Medical Equipment)
KN 11 (2008-5) with RRL Notice No. 2008-3 (May 20, 2008)	Conformity Assessment Procedure for Electromagnetic Interference; With KN 11
KN 11 (Annex 3) with RRA Announce 2008-11 (Dec. 16, 2008)	Conformity Assessment Procedure for Electromagnetic Interference; With KN 11 (Annex 3)
KN 14-1 (2008-5) with RRL Notice No. 2008-3 (May 20, 2008)	Electromagnetic Compatibility - Requirements for household appliances, electric tools and similar apparatus - Emission
KN 22 (2008-5) with RRL Notice No. 2008-3 (May 20, 2008)	Conformity Assessment Procedure for Electromagnetic Interference; With KN 22
KN 32 (Annex 11); RRA Announce 2016-19 (Dec. 19, 2016)	Test methods for electromagnetic compatibility; K only

## **Immunity**

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<b>Designation</b>	<b>Description</b>
EN 55035 (2017)	Electromagnetic Compatibility Of Multimedia Equipment - Immunity Requirements (Cispr 35:2016, Modified)
IEC 61000-4-2, Ed. 2.0 (2008-12)	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test
IEC 61000-4-3, Ed. 3.0 (2006-02)	Electromagnetic compatibility (EMC) - Part 4-3: Testing measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test
IEC 61000-4-3, Ed. 3.0 (2006-02) + A1 (2007)	Electromagnetic compatibility (EMC) - Part 4-3: Testing measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-3 (2006)	Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-3 (2006) +A1 (2008)	Electromagnetic compatibility (EMC). Testing and measurement techniques. Radiated, radio- Frequency, electromagnetic field immunity test
EN 61000-4-3 (2006) +A1 (2008) + A2 (2010)	Electromagnetic compatibility (EMC). Testing and measurement techniques. Radiated, radio- Frequency, electromagnetic field immunity test
IEC 61000-4-3, Ed. 3.1 (2008-04)	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test



# ELECTROMAGNETIC COMPATIBILITY & TELECOMMUNICATIONS

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IEC 61000-4-3 Ed. 3.2 (2010)	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test
IEC 61000-4-4, Ed. 2.0 (2004-07)	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test
IEC 61000-4-4, Ed. 2.0; C1 (2006)	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test
IEC 61000-4-4, Ed. 2.0 + C1 (2006) + C2 (2007)	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test
IEC 61000-4-4, Ed. 2.0 + C2 (2007)	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test
EN 61000-4-4 (2004)	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test
IEC 61000-4-4 (2012-04)	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test
IEC 61000-4-5 Ed. 3.0 (May 2014)	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test
EN 61000-4-5 (2014)	Electromagnetic Compatibility (Emc) - Part 4-5: Testing And Measurement Techniques - Surge Immunity Test
IEC 61000-4-5, Ed. 1.1 (2001-04); EN 61000-4-5	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test
IEC 61000-4-5, Ed 1.1 (2005-11)	EMC - Part 4-5: Testing and measurement techniques - Surge immunity test
IEC 61000-4-5, Ed 2 (2005-11)	EMC - Part 4-5: Testing and measurement techniques - Surge immunity test
BS EN 61000-4-5 (2006)	Electromagnetic compatibility (EMC). Testing and measurement techniques. Surge immunity test
IEC 61000-4-6 Ed. 3.0 (2008)	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields
IEC 61000-4-6 Ed. 4.0 (2013)	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields
EN 61000-4-6 (2009)	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields
IEC 61000-4-8 (2009)	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test
IEC 61000-4-9, Ed 1.1 (2001-03)	EMC - Part 4-9: Testing and Measurement Techniques - Pulse Magnetic Field Immunity Test



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IEC 61000-4-10, Ed 1.1 (2001-03)	EMC - Part 4-10: Testing and measurement techniques - Damped oscillatory magnetic field immunity test
IEC 61000-4-11 (2004) + A1 (2017)	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests
IEC 61000-4-11 (2004)	Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests
IEC 61000-4-12, 2nd edition (2006-09)	EMC - Part 4-12: Testing and measurement techniques - Ring wave immunity test
IEC 61000-4-18, ed. 1.1 (2011-03)	Electromagnetic compatibility (EMC) - Part 4-18: Testing and measurement techniques - Damped oscillatory wave immunity test
EN 61000-4-29 (2001), IEC 61000-4-29 (2000)	Electromagnetic compatibility (EMC). Testing and measurement techniques. Testing and measurement techniques. Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests. Voltage dips, short interruptions and voltage variations on d.c.input power ports. Immunity tests. Basic EMC Publication.
EN 61326-1(2006)	Electrical equipment for measurement, control and laboratory use - EMC requirements
EN 61326-1 (2013)	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
IEC 61326-2-6, Ed. 1.0 (2005-12)	Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 2-6: Particular requirements - In vitro diagnostic (IVD) medical equipment
IEC/CISPR 14-2 Ed. 2. (2015)	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity - Product family standard
CISPR 24 (2010) + A1 (2015)	Information technology equipment - Immunity characteristics - Limits and methods of measurement
IEC/CISPR 24 (1997) and EN 55024 (1998) + A1(2001), A2(2003)	Information technology equipment - Immunity characteristics - Limits and methods of measurement
CISPR 35 (2016)	Electromagnetic compatibility of multimedia equipment - Immunity requirements
[KN 35 (Annex 11-2); RRA Announce 2016-79 (Dec. 19, 2016)]	Test methods for electromagnetic compatibility; K only

## **Product Safety**

<b>Designation</b>	<u>Description</u>
IEC 60601-1-2, Ed. 4, (2014-02)	Medical electrical equipment-Part 1-2: General requirements for basic safety and essential performance-Collateral Standard: Electromagnetic disturbances-Requirements and tests
IEC 60601-1-2, Ed. 1 (1993); Ed. 2 (2001-09); JIS T0601-1-2 (2002.7)	Medical electrical equipment - Part 1 and Part 1-2: General requirements for safety: Collateral standard: EMC - Requirements and tests
IEC 60601-1-2, Ed 2.1 (2004-11) & EN 60601-1-2 (2002)	Medical electrical equipment - Part 1-2: General requirements for safety - Collateral standard: Electromagnetic compatibility - Requirements and tests



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IEC 60601-1-2, Ed. 3.0 (2007)	Medical electrical equipment	Part 1-2: General	requirements for safety - Collateral

standard: Electromagnetic compatibility - Requirements and tests

GMW3172, 12th Edition, June 2015 General Specification for Electrical/Electronic Components - Environmental Durability;

Mechanical (9.3), Climatic (9.4), and Enclosure (9.5)

#### **Telecommunications**

<u>Designation</u>	<u>Description</u>
EN 60068-2-6 (2008)	Environmental testing. Tests. Test Fc. Vibration (sinusoidal)
IEC 60068-2-6 ed 7.0 (2007)	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)
EN 60068-2-27 (2009)	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock
IEC 60068-2-27 ed 4.0 (2008)	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock
IEC 60068-2-30, ed. 3 (2005)	Environmental testing - Part 2-30: Tests-Test Db: Damp heat, cyclic (12 h + 12 h cycle)
EN 60068-2-30 (2005)	Environmental testing. Tests. Test Db and guidance: Damp heat, cyclic (12 h + 12 h cycle)