

UL International Italia Srl Via delle Industrie, 6 20061 Carugate MI	Numero di accreditamento: 1363 L Sede A
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ELENCO PROVE ACCREDITATE - CATEGORIA: 0

Alimentatori a bassa tensione con uscita in corrente continua / Low-Voltage power supplies, d.c. Output

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Misure di emissione e prove di immunità / Emission measurements and immunity tests	IEC 61204-3:2011 IEC 61204-3:2016 EN 61204-3:2000 EN 61204-3:2018	

Apparati radio e apparati ausiliari / Radio and ancillary equipment

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Compatibilità elettromagnetica e questioni relative allo spettro delle radiofrequenze (ERM); compatibilità elettromagnetica (EMC) per apparecchiature e servizi radio; Parte 3: Condizioni specifiche per dispositivi a breve portata (SRD) operanti su frequenze tra 9 kHz e 246 GHz / Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz (f min = 9 kHz f max = 18 GHz)	ETSI EN 301 489-3 V1.6.1	
Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 34: Specific conditions for External Power Supply (EPS) for mobile phones	ETSI EN 301 489-34 V1.4.1	
Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for Broadband Data Transmission Systems (f min = 9 kHz f max = 18 GHz)	ETSI EN 301 489-17 V3.1.1	
Misura di emissione di spurie dei ricevitori / Receiver spurious emission	ETSI EN 300 328 V2.1.1	
Misura di emissione di spurie dei ricevitori / Receiver spurious emission (Intervallo operativo di frequenza: f min = 9 kHz f max = 18 GHz/ Operating frequency range: f min = 9 kHz f max = 18 GHz)	ETSI EN 300 440-2 V1.4.1	
Misura di emissione di spurie dei trasmettitori/Transmitter spurious emission	ETSI EN 300 328 V2.1.1	
Misura di emissione di spurie dei trasmettitori/Transmitter spurious emission (Intervallo operativo di frequenza: f min = 9 kHz f max = 18 GHz/ Operating frequency range: f min = 9 kHz f max = 18 GHz)	ETSI EN 300 440 V2.1.1	

Apparati radio e apparati ausiliari/Radio and ancillary equipment

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Compatibilità elettromagnetica e questioni relative allo spettro delle radiofrequenze (ERM); compatibilità elettromagnetica (EMC) per apparecchiature e servizi radio; Parte 1: Requisiti tecnici comuni / Electromagnetic compatibility and Radio Spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirement (f min = 9 kHz f max = 18 GHz) (Esclusi paragrafi 9.6 e Annex B / Excluded clause 9.6 e Annex B)	ETSI EN 301 489-1 V2.1.1 escl. 9.6, Annex B	

Apparecchi di illuminazione / Lighting Equipment

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Misure di emissione / Emission measurements	CISPR 15:2013 +A1:2015 CISPR 15:2018 (Escluse le lampade singole/Excluded single capped lamps) EN 55015:2013+A1:2015	
Prove di immunità / Immunity tests	IEC 61547:2009 EN 61547:2009	

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Apparecchi e sistemi per la navigazione marittima e radiocomunicazione / Maritime navigation and radiocommunication equipment and system

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Misure di emissione e prove di immunità / Emission measurements and immunity tests	IEC 60945:2002+COR1:2008 EN 60945:2002 (clauses 9 and 10)	

Apparecchi elettrici di misura, controllo e per utilizzo in Laboratorio / Electrical equipment for measurement, control and laboratory use

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Misure di emissione e prove di immunità / Emission measurements and immunity tests	IEC 61326-1:2012 EN 61326-1:2013	

Apparecchi Elettromedicali / Medical Electrical Equipment

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Misure di emissione e prove di immunità / Emission measurements and immunity tests	IEC 60601-1-2:2007 IEC 60601-1-2:2014 EN 60601-1-2:2007+AC:2010 EN 60601-1-2:2015	

Apparecchi industriali, scientifici e medicali / Industrial, scientific and medical equipment

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Emission measurements	ICES-001 (Issue 4, June 2006)	
Misure di emissione / Emission measurements	CISPR 11:2015 + A1:2016+A2:2019 CISPR 11:2009+A1:2010 EN 55011:2016 EN 55011 :2009+A1:2010	

Apparecchi per la tecnologia dell'informazione / Information technology equipment

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Misure di emissione / Emission measurements	CISPR 22:2008 EN 55022:2010+AC: 2011	

Apparecchi per la tecnologia dell'informazione / Information technology equipment

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Prove di immunità / Immunity tests	CISPR 24:2010 +A1:2015 EN 55024:2010+A1:2015	

Apparecchiatura per la saldatura ad arco / Arc welding equipment

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Misure di emissione e prove di immunità / Emission measurements and immunity tests	IEC 60974-10:2014 + A1:2015 EN 60974-10:2014 + A1:2015	

Apparecchiature assiemate di protezione e di manovra per bassa tensione (quadri BT) / Low-voltage switchgear and controlgear assemblies

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Misure di emissione e prove di immunità / Emission measurements and immunity tests	IEC 61439-1:2011 EN 61439-1:2011	

Apparecchiature elettriche ed elettroniche / Electric and electronic equipment

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Electrical fast transient / burst immunity test	IEC 61000-4-4:2012 EN 61000-4-4:2012	
Electrostatic discharge immunity test	IEC 61000-4-2:2008 EN 61000-4-2:2009	
- Harmonic current measurement	IEC 61000-3-12:2011 EN 61000-3-12:2011	

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- Harmonic current measurement	IEC 61000-3-2:2014 IEC 61000-3-2:2018 (Esclusi gli apparecchi di illuminazione con potenza compresa tra 5 W e 25 W/Excluded lighting equipment with input power between 5 W and 25 W) EN 61000-3-2:2014
Immunity to conducted disturbances, induced by radio-frequency fields	IEC 61000-4-6:2013 EN 61000-4-6:2014
Immunity to conducted, differential mode disturbances and signalling in the frequency range 2 kHz to 150 kHz at a.c. power ports	IEC 61000-4-19:2014 EN 61000-4-19:2014
Prova di immunità a fluttuazioni di tensione / Voltage fluctuations immunity test	IEC 61000-4-14:1999+A1:2001+A2:2009 EN 61000-4-14:1999+A1:2004+A2:2009
Prova di immunità a onde oscillatorie / Ring wave immunity test	IEC 61000-4-12:2006 IEC 61000-4-12:2017 EN 61000-4-12:2006 EN 61000-4-12:2017
Prova di immunità ai buchi di tensione, alle brevi interruzioni e alle variazioni di tensione sulle porte di alimentazione a tensione continua / Voltage dips, short interruptions and voltage variations on d.c. Input power ports, immunity tests	IEC 61000-4-29:2000 EN 61000-4-29:2000
Prova di immunità ai campi magnetici a frequenza di rete / Power frequency magnetic field immunity test	IEC 61000-4-8:2009 EN 61000-4-8:2010
Prova di immunità ai disturbi condotti di modo comune (0Hz to 150kHz) / Immunity to conducted common mode disturbances (0Hz to 150kHz)	IEC 61000-4-16:1998+A1:2001+A2:2009 IEC 61000-4-16:2015 EN 61000-4-16:1998+A1:2004+A2:2011 EN 61000-4-16:2016
Prova di immunità alle variazioni della frequenza di alimentazione / variation of power frequency, immunity test	IEC 61000-4-28:1999+A1:2001+A2:2009 EN 61000-4-28:2000+A1:2004+A2:2009
Radiated, radio-frequency, electromagnetic field immunity test	IEC 61000-4-3:2006 + A1:2007 + A2:2010 EN 61000-4-3:2006 + A1:2008 + IS1:2009 + A2:2010
Surge immunity test	IEC 61000-4-5:2014+A1:2017 EN 61000-4-5:2014+A1:2017
Testing and measurement techniques – Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests	IEC 61000-4-13:2002+A1:2009+A2:2015 EN 61000-4-13:2002+A1:2009+A2:2016
Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests	IEC 61000-4-11:2004+A1:2017 EN 61000-4-11:2004+A1:2017
Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current more than 16 A per phase	IEC 61000-4-34:2005+A1:2009 EN 61000-4-34:2007+A1:2009
- Voltage changes, voltage fluctuations and flicker measurement	IEC 61000-3-3:2013+A1:2017 EN 61000-3-3:2013
- Voltage changes, voltage fluctuations and flicker measurement	IEC 61000-3-11:2017 EN 61000-3-11:2000
Apparecchiature elettriche ed elettroniche e materiali metallici / Electric and electronic equipment and metal materials	
<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i> <i>O&I</i>
Test Db: Damp heat, cyclic (12 h + 12 h cycle)	IEC 60068-2-30:2005 EN 60068-2-30:2005

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- Voltage, current and frequency (par.4.1);	IEC 61727:2004
- Normal voltage operating range (par.4.2);	EN 61727:1995
- Flicker (par.4.3);	
- DC injection (par.4.4);	
- Normal frequency operating range (par.4.5);	
- Harmonics and waveform distortion (par.4.6);	
- Power factor (par.4.7);	
- Loss of utility voltage (par.5.1);	
- Over/under voltage and frequency (par.5.2);	
- Islanding protection (par.5.3);	
- Response to utility recovery (par.5.4) (Tutto tranne 5.5, 5.6, 5.7)	

Convertitori connessi alla rete e protezione di interfaccia/Grid connected converters and interface protections

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
- Compatibility with the electrical grid (par.4); - Personal safety and PV system protection (par. 5); - External control (par. 6); - Requirements for supportability to voltages caused by electrical faults (fault ride through - FRT) (par. 7)	ABNT NBR 16149:2013	
- Disconnection times (par.13.8.3.1); - Over / Under Voltage (par.13.8.3.2); - Over / Under Frequency (par.13.8.3.3); - Loss of Mains Protection, Inverter connected machines (par.13.8.3.4A); - Reconnection (par.13.8.3.5); - Frequency Drift and Step Change Stability test (par.13.8.3.6) - Harmonics (par.13.8.4.1); - Power Factor (par.13.8.4.2); - Voltage Flicker (par.13.8.4.3); - DC Injection (par.13.8.4.4); - Over current Protection (par.13.8.3.4.5) - Short circuit Current Contribution inverter connected Generating Units (par.13.8.4.6A); - Self Monitoring - Solid State Disconnection (par.13.8.4.7)	ENA G59/3-2:2015	
- Disconnection times (par.A1.3.1); - Over / Under Voltage (par.A1.3.2); - Over / Under Frequency (par.A1.3.3); - Loss of Mains (LoM) Protection (par.A1.3.4); - Re-connection (par.A1.3.5); - Frequency Drift and Step Change Stability test (par.A1.3.6); - Harmonics (par.A1.4.1); - Power Factor (par.A1.4.2); - Voltage Flicker (par.A1.4.3); - DC Injection (par.A1.4.4); - Short circuit Current Contribution (par.A1.4.6); - Self Monitoring - Solid State Disconnection (par.A1.4.7) (Type Verification Functional Testing of the Interface Protection (Appendix A1.3))	ENA G83/2:2012	
- Efficiency measurement (par.4,5,6); - Loss measurements (par.7) (Tutto)	IEC 61683:1999 EN 61683:2000	

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- Flicker (par. 6.1);
- c.c. component injection (par. 6.2);
- Harmonics and wave-form distortion (par. 6.3);
- Power factor (par. 6.4);
- Reactive power injection / demand (par. 6.5);
- Voltage variation (par. 6.6);
- Frequency variation (par. 6.7);
- Active power control in overfrequency (par. 6.8);
- Reconnection (par. 6.9);
- Automatic out-of-phase reconnection (par. 6.10);
- Active power limitation (par. 6.11);
- Reactive power command (par. 6.12);
- Disconnection and reconnection of the photovoltaic system in the electrical grid (par. 6.13);
- Supportability requirements to undervoltages due to faults in the electrical grid (fault ride through - FRT)

ABNT NBR 16150:2013

Islanding prevention measures

ABNT NBR IEC 62116:2012

- Misura di correnti armoniche (par.N.3.1);
- Misura di fluttuazioni di tensione dovute a manovre di sezionamento/separazione (par.N.3.2);
- Misura di fluttuazioni di tensione (flicker) in condizioni di funzionamento continuo (par.N.3.3);
- Verifica del campo di funzionamento in tensione e frequenza (par.N.4);
- Verifica delle condizioni di sincronizzazione e presa di carico (par.N.5);
- Verifica dei requisiti costruttivi circa lo scambio di potenza reattiva (par.N.6);
- Verifica dei requisiti costruttivi circa la regolazione di potenza attiva (par.N.7);
- Verifica della insensibilità agli abbassamenti di tensione (VFRT capability) (par.N.8);
- Verifica della insensibilità alle richiuse automatiche in discordanza di fase (par.N.9)
- Misura di correnti armoniche (par.Nbis.3.1);
- Misura di fluttuazioni di tensione dovute a manovre di sezionamento/separazione (par.Nbis.3.2);
- Misura di fluttuazioni di tensione (flicker) in condizioni di funzionamento continuo (par.Nbis.3.3);
- Verifica del campo di funzionamento in tensione e frequenza (par.Nbis.4);
- Verifica delle condizioni di sincronizzazione e presa di carico (par.Nbis.5);
- Verifica dei requisiti costruttivi circa lo scambio di potenza reattiva (par.Nbis.6);
- Verifica dei requisiti costruttivi circa la regolazione di potenza attiva (par.Nbis.7);
- Verifica della insensibilità agli abbassamenti di tensione (VFRT capability) (par.Nbis.8);
- Verifica della insensibilità alle richiuse automatiche in discordanza di fase (par.Nbis.9) (<120kVA)

CEI 0-16:2014-09+V1:2014-12+V2:2016-07

- Over / Under Voltage (par.D.2.3);
- Over / Under Frequency (par.D.2.4);
- Loss of Mains (LoM) detection (par.D.2.5);
- Operating range (par.D.3.1);
- Active power feed-in at under-frequency (par.D.3.2);
- Power response to over-frequency (par.D.3.3);
- Reactive power capability (par.D.3.4);
- Connection and starting to generate electrical power (par.D.3.6);
- Short-circuit current contribution (par.D.3.7);
- Harmonic current emission (par.D.3.8);
- Voltage fluctuations and flicker (D.3.9);
- DC injection (par.D.3.10)

EN 50438:2013

- Procedure of evaluation (par.4)

UNE 206006 IN:2011

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Vedere dettagli della norma DIN V VDE V 0124-100:2012 (Tutto)

VDE-AR-N 4105:2011

Dispositivi a radiofrequenza, apparati digitali/RF devices, digital apparatus

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Misure di emissione / Emission measurements	ICES-003 (Issue 6, January 2016)	

Elettrodomestici, utensili elettrici e apparecchi simili / Household appliances, Electric tools and similar apparatus

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
5.5.2 - Time domain evaluation of magnetic fields, 5.5.3 - Line spectrum evaluation, 5.5.4 - Simplified test methods	IEC 62233:2005 EN 62233:2008	
Misure di emissione / Emission measurements	CISPR 14-1:2005+A1:2008+A2:2011 CISPR 14-1:2016+COR1:2016 EN 55014-1:2006+A1:2009+A2:2011 EN 55014-1:2017	
Prove di immunità / Immunity tests	CISPR 14-2:2015 EN 55014-2:2015	

Fire hazard testing

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Glowing/hot-wire based test methods – Glow-wire flammability index (GWFI) test method for materials	IEC 60695-2-12:2010+A1:2014	
Glowing/hot-wire based test methods – Glow-wire ignition temperature (GWIT) test method for materials	IEC 60695-2-13:2010+A1:2014	
Glowing/hot-wire based test methods –Glow-wire flammability test method for end products	IEC 60695-2-11:2014	
Glowinghot-wire based test methods – Glow-wire apparatus and common test procedure	IEC 60695-2-10:2013	
Test flames – 50 W horizontal and vertical flame test methods	IEC 60695-11-10:2013	
Test flames – Needle-flame test method - Apparatus, confirmatory test arrangement and guidance	IEC 60695-11-5:2016	

Gradi di protezione forniti dalle coperture / Degrees of protection provided by enclosures

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
12 Tests for protection against access to hazardous parts indicated by the first; 13 Tests for protection against solid foreign objects indicated by the first characteristic numeral; 14 Tests for protection against water indicated by the second characteristic numeral; 15 Tests for protection against access to hazardous parts indicated by the additional letter; characteristic numeral (Escluso grado IPX9 / IPX9 excluded)	IEC 60529:1989+A1:1992+A2:2013 EN 60529:1991+ A1:2000+A2:2013+AC:2016-12	

Household and similar electrical appliances - Safety - Part 2-100: Particular requirements for hand-held mains-operated garden blowers, vacuums and blower vacuums

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards	IEC 60335-2-100:2002	

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Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per apparecchi di grigliatura per uso esterno

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards	IEC 60335-2-78:2002+A1:2008 EN 60335-2-78:2003+A1:2008	

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per apparecchi per il riscaldamento di liquidi

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards	IEC 60335-2-15:2002+A1:2005 +A2:2008 IEC 60335-2-15:2012+A1:2016 EN 60335-2-15:2002 +A1:2005 +A2:2008 +A11:2012+corrigendum Jul.2005 + corrigendum Dec.2006 + A11:2012/AC:2013 EN 60335-2-15:2016	

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per apparecchi elettrici di riscaldamento per locali

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards	IEC 60335-2-30:2002+A1:2004 +A2:2007 IEC 60335-2-30:2009+A1:2016 EN 60335-2-30:2003 + A1:2004 +A2:2007 EN 60335-2-30:2009+A11:2012+corrigendum Mar.2010+AC:2014	

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per apparecchi elettrici annessi ad acquari e bacini da giardino

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
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IEC 60335-2-55:2002+A1:2008
EN 60335-2-55:2003 + A1:2008

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per apparecchi per vaporizzare sostanze insettifughe o deodoranti

Denominazione della prova / Campi di prova

Metodo di prova

O&I

7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards

IEC 60335-2-101:2002+A1:2008 +A2:2014
EN 60335-2-101:2002 +A1:2008 +A2:2014

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per apparecchi di refrigerazione, apparecchi per gelati e produttori di ghiaccio

Denominazione della prova / Campi di prova

Metodo di prova

O&I

7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards (Tutto tranne 21.101)

IEC 60335-2-24:2002+A1:2005+A2:2007
IEC 60335-2-24:2010+A1:2012+A2:2017
EN 60335-2-24:2003
+A1:2005+A2:2007+A11:2004+A12:2009+corr
igendum Aug.2010
EN 60335-2-24:2010

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per apparecchi di pulizia di superfici con l'uso di agenti pulenti liquidi o vapore per uso domestico

Denominazione della prova / Campi di prova

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7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards (Tutto tranne 21.101, 21.102, 21.103,21.104, 21.105)

IEC 60335-2-54:2002+A1:2004 +A2:2007
IEC 60335-2-54:2008+A1:2015
EN 60335-2-54:2003 +A1:2004 +A2:2007 +A11:2006
EN 60335-2-54:2008
+A11:2012+A11:2012/AC:2015 + A1:2015

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per apparecchi aventi bruciatori a gas, gasolio e combustibile solido provvisti di connessioni elettriche

Denominazione della prova / Campi di prova

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7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards

IEC 60335-2-102:2004+A1:2008+A2:2012
IEC 60335-2-102:2017
EN 60335-2-102:2006+A1:2010
EN 60335-2-102:2016

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per apparecchi per la pulizia a secco o umida, incluse le spazzole a motore, per uso industriale e commerciale

Denominazione della prova / Campi di prova

Metodo di prova

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7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards (Tutto tranne 21.102, 21.103,21.104, 21.105, 21.106)

IEC 60335-2-69:2002+A1:2004+A2:2007
IEC 60335-2-69:2012
IEC 60335-2-69:2016
EN 60335-2-69:2009
EN 60335-2-69:2012

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per apparecchi per il trattamento dei pavimenti e per la pulitura dei pavimenti bagnati, per uso industriale e collettivo

Denominazione della prova / Campi di prova

Metodo di prova

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7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards

IEC 60335-2-67:2002+A1:2005
 IEC 60335-2-67:2012+A1:2016
 EN 60335-2-67:2009
 EN 60335-2-67:2012

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per apparecchi per la refrigerazione commerciale comprendenti un'unità di condensazione del fluido frigorifero o un compressore, incorporato o remoto

Denominazione della prova / Campi di prova

Metodo di prova

O&I

7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards

IEC 60335-2-89:2002+A1:2005+A2:2007
 IEC 60335-2-89:2010+A1:2012+A2:2015
 EN
 60335-2-89:2002+A1:2005+A2:2007+A11:2004+corrigendum Aug.2010
 EN
 60335-2-89:2010+AC:2014+A1:2016+A2:2017

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per armadi caldi elettrici per uso collettivo

Denominazione della prova / Campi di prova

Metodo di prova

O&I

7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards

IEC 60335-2-49:2002+A1:2008
 EN
 60335-2-49:2003+A1:2008+A11:2012+corrigendum Sep.2007

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Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per asciugabiancheria

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
7 - Marking	IEC 60335-2-11:2008+A1:2012+A2:2015	
8 - Protection against access to live parts	EN 60335-2-11:2010+A11:2012+A1:2015	
10 - Power input		
11 - Heating		
13 - Leakage current and el. strength at op. temp		
14 - Transient overvoltages		
15 - Moisture resistance		
16 - Leakage current and el. Strength		
17- Overload protection of transformers and associated circuits		
18 - Endurance		
19 - Abnormal Operations		
20 - Stability and mechanical hazards		
21 - Mechanical strength		
22 - Construction		
23 - Internal wiring		
24 - Components		
25 - Supply connection and ext. flexible cords		
26 - Terminals for external conductors		
27 - Provision for earthing		
28 - Screws and connections		
29 - Cl./Cr. distances and solid insulation		
30 - Resistance to heat and fire		
31 Resistance to rusting		
32 Radiation, toxicity and similar hazards		
Annex AA		
Annex BB		

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per aspirapolvere ed apparecchi per pulizia ad aspirazione d'acqua

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards (Tutto tranne 21.101, 21.102, 21.103,21.104, 21.105)	IEC 60335-2-2:2002+A1: 2004 +A2:2006 IEC 60335-2-2:2009+A1:2012+A2:2016 EN 60335-2-2:2003 +A1:2004 +A2:2006 +A11:2010 +A11/EC:2012 EN 60335-2-2:2010 +A11:2012 +A1:2013	

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per attuatori di cancelli, porte e finestre motorizzati

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards (Tutto tranne 32.101)	IEC 60335-2-103:2002 IEC 60335-2-103:2006+A1:2010 IEC 60335-2-103:2015 EN 60335-2-103:2003 +A11:2009 EN 60335-2-103:2015	

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7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards

IEC 60335-2-23:2003+A1:2008+A2:2012
IEC 60335-2-23:2016
EN
60335-2-23:2003+A1:2008+A11:2010+A11/AC
:2012+A2:2015

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per gli apparecchi per l'asciugatura dei tessuti e per gli asciugasalviette

Denominazione della prova / Campi di prova

Metodo di prova

O&I

7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards

IEC 60335-2-43:2002+A1:2005+A2:2008
EN 60335-2-43:2003+A1:2006+A2:2008

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per gli apparecchi per il trattamento dei pavimenti e per gli strofina-pavimenti per pavimenti bagnati

Denominazione della prova / Campi di prova

Metodo di prova

O&I

7 Marking and instructions, 8 Protection against access to live parts, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards

IEC 60335-2-10:2002+A1:2008
EN 60335-2-10:2003+A1:2008

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per grill e tostapane elettrici per uso collettivo

Denominazione della prova / Campi di prova

Metodo di prova

O&I

7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards

IEC 60335-2-48:2002+A1:2008+A2:2017
EN
60335-2-48:2003+A1:2008+A11:2012+corrige
ndum Sep.2007

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7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards

IEC 60335-2-38:2002+A1:2008+A2:2017
EN 60335-2-38:2003+A1:2008+corrigendum
Aug.2007

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per pompe

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards	IEC 60335-2-41:2002+A1:2004+A2:2009 IEC 60335-2-41:2012 EN 60335-2-41:2003+A1:2004+A2:2010	

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per rasoi, tosatrici e apparecchi elettrici analoghi

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards	IEC 60335-2-8:2002+A1:2005+A2:2008 IEC 60335-2-8:2012+A1:2015 EN 60335-2-8:2003+A1:2005+A2:2008 EN 60335-2-8:2015+A1:2016	

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per riscaldatori fissi ad immersione

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards	IEC 60335-2-73:2002+A1:2006+A2:2009 EN 60335-2-73:2003+A1:2006+A2:2009	

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7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards (Tutto tranne 22.7, 22.106)

IEC 60335-2-88:2002
EN 60335-2-88:2002

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per utensili elettrici mobili riscaldanti e apparecchi similari

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards	IEC 60335-2-45:2002+A1:2008+A2:2011 EN 60335-2-45:2002+A1:2008+A2:2012	

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per vasche per idromassaggio e per piscine di tipo "spa"

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards	IEC 60335-2-60:2002+A1:2004+A2:2008 EN 60335-2-60:2003+A1:2005+A2:2008+A11:2010+A12:2010	

Sicurezza degli apparecchi elettrici d'uso domestico e similare - Parte 2: Norme particolari per ventilatori

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
7 Marking and instructions, 8 Protection against access to live parts, 9 Starting of motor-operated appliances, 10 Power input and current, 11 - Heating, 13 - Leakage current and electric strength at operating temperature, 14 - Transient overvoltage, 15 - Moisture resistance, 16 Leakage current and electric strength, 17 - Overload protection of transformers and associated circuits, 18 - Endurance, 19 - Abnormal operation, 20 - Stability and mechanical hazards, 21 - Mechanical strength, 22 - Construction, 23 - Internal wiring, 24 - Components, 25 - Supply connection and external flexible cords, 26 - Terminal s for external conductors, 27 - Provision for earthing, 28 - Screws and connections, 29 - Clearances, creepage distances and solid insulation, 30 - Resistance to heat and fire, 31 - Resistance to rusting, 32 - Radiation, toxicity and similar hazards	IEC 60335-2-80:2002+A1:2004+A2:2008 IEC 60335-2-80:2015 EN 60335-2-80:2003+A1:2004+A2:2009	

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Classificazione / Classification (par. 6);
 Marcatura e istruzioni / Marking and instructions (par. 7);
 Protezione contro l'accesso a parti in tensione / Protection against access to live parts (par. 8);
 Potenza e corrente / Power input and current (par. 10);
 Riscaldamento / Heating (par. 11);
 Corrente di dispersione e rigidità dielettrica alla temperatura di funzionamento / Leakage current and electric strength at operating temperature (par. 13);
 Sovratensioni transitorie / Transient overvoltage (par. 14);
 Resistenza all'umidità / Moisture resistance (par. 15);
 Corrente di dispersione e rigidità dielettrica / Leakage current and electric strength (par. 16);
 Protezione contro il sovraccarico dei trasformatori e dei circuiti associati / Overload protection of transformers and associated circuits (par. 17);
 Durata / Endurance (par. 18);
 Funzionamento anormale / Abnormal operation (par. 19);
 Stabilità e pericoli meccanici / Stability and mechanical hazards (par. 20);
 Resistenza meccanica / Mechanical strength (par. 21);
 Costruzione / Construction (par. 22);
 Cavi interni / Internal wiring (par. 23);
 Componenti / Components (par. 24);
 Collegamento alla rete e cavi flessibili esterni / Supply connection and external flexible cords (par. 25);
 Morsetti per cavi esterni / Terminals for external conductors (par. 26);
 Disposizioni per la messa a terra / Provision for earthing (par. 27);
 Viti e connessioni / Screws and connections (par. 28);
 Distanze di isolamento superficiali, in aria e distanze attraverso l'isolamento solido / Clearances, creepage distances and solid insulation (par. 29);
 Resistenza al calore e al fuoco / Resistance to heat and fire (par. 30);
 Protezione contro la ruggine / Resistance to rusting (par. 31);
 Radiazione, tossicità e pericoli analoghi / Radiation, toxicity and similar hazards (par. 32)

IEC 60335-2-25:2010+A1:2014+A2:2015
EN 60335-2-25:2012+A1:2015+A2:2016

Sicurezza dei convertitori di potenza utilizzati negli impianti Fotovoltaici. Parte 2: Prescrizioni particolari per gli inverter

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
4 General testing requirements, 5 -Marking and documentation, 6 - Environmental requirements and conditions, 7 -Protection against electric shock and energy hazards, 8 - Protection against mechanical hazards, 9 Protection against fire hazards, 10 - Protection against sonic pressure hazards, 11 - Protection against liquid hazards, 12 - Chemical hazards, 13 Physical requirements, 14 - Components - (eccetto 8.4, 8.5)	IEC 62109-2:2011 EN 62109-2:2011	

Sistemi di allarme / Alarm systems

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Electromagnetic compatibility - Immunity requirements	EN 50130-4:2011 + A1:2014	

Solid insulating materials

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Method for the determination of the proof and the comparative tracking indices of solid insulating materials	IEC 60112:2009	

Unintentional Radiators (FCC Part 15, Subpart B)

<i>Denominazione della prova / Campi di prova</i>	<i>Metodo di prova</i>	<i>O&I</i>
Electromagnetic compatibility - Radiated and conducted emissions (up to 18 GHz)	ANSI C63.4-2014 FCC Part 15, Subpart B	

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ELENCO PROVE ACCREDITATE - CATEGORIA: III

Convertitori connessi alla rete e protezione di interfaccia / Grid connected converters and interface protections

Denominazione della prova / Campi di prova	Metodo di prova	O&I
Appendix B (Power factor test), Appendix C (Harmonic current limit test), Appendix D (Transient voltage limit test), Appendix E (DC injection test), Appendix F (Active anti-islanding test), Appendix G (Voltage and frequency limits (Passive anti-islanding protection) test), Appendix H (Limits for sustained operation), Appendix I (Demand and power quality response mode testing including disconnection on external signal), Appendix J (Multiple inverter testing)	AS/NZS 4777.2:2015	
<ul style="list-style-type: none"> - Compatibility with the electrical grid (par.4); - Personal safety and PV system protection (par. 5); - External control (par. 6); - Requirements for supportability to voltages caused by electrical faults (fault ride through - FRT) (par. 7) 	ABNT NBR 16149:2013	
<ul style="list-style-type: none"> - Disconnection times (par.A1.3.1); - Over / Under Voltage (par.A1.3.2); - Over / Under Frequency (par.A1.3.3); - Loss of Mains (LoM) Protection (par.A1.3.4); - Re-connection (par.A1.3.5); - Frequency Drift and Step Change Stability test (par.A1.3.6); - Harmonics (par.A1.4.1); - Power Factor (par.A1.4.2); - Voltage Flicker (par.A1.4.3); - DC Injection (par.A1.4.4); - Short circuit Current Contribution (par.A1.4.6); - Self Monitoring - Solid State Disconnection (par.A1.4.7) (Type Verification Functional Testing of the Interface Protection (Appendix A1.3)) 	ENA G83/2:2012	
<ul style="list-style-type: none"> - Efficiency measurement (par.4,5,6); - Loss measurements (par.7) 	IEC 61683:1999; EN 61683:2000	
<ul style="list-style-type: none"> - Flicker (par. 6.1); - c.c. component injection (par. 6.2); - Harmonics and wave-form distortion (par. 6.3); - Power factor (par. 6.4); - Reactive power injection / demand (par. 6.5); - Voltage variation (par. 6.6); - Frequency variation (par. 6.7); - Active power control in overfrequency (par. 6.8); - Reconnection (par. 6.9); - Automatic out-of-phase reconnection (par. 6.10); - Active power limitation (par. 6.11); - Reactive power command (par. 6.12); - Disconnection and reconnection of the photovoltaic system in the electrical grid (par. 6.13); - Supportability requirements to undervoltages due to faults in the electrical grid (fault ride through - FRT) 	ABNT NBR 16150:2013	
<ul style="list-style-type: none"> - Flicker (par.4.1.3); - Harmonics and waveform distortion (par.4.1.6); - Power factor (par.4.1.7); - Synchronization (par.4.1.8); - Overvoltage and undervoltage (par.4.2.2.3.2); - Overfrequency and underfrequency (par.4.2.2.3.3); - Prevention of islanding (par.4.2.2.4); - DC current injection (par.4.2.2.5) 	NRS 097-2-1:2010	

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<ul style="list-style-type: none"> - Functional safety (par.6.1); - Switch-on condition (par.6.2) - Voltage monitoring (par.6.3); - Frequency monitoring (par.6.4); - Direct current monitoring (par.6.5); - Detection of island operation (par.6.6) 	DIN VDE V 0126-1-1 (VDE V 0126-1-1):2013-08
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<ul style="list-style-type: none"> - Injection of direct current to main supply (par. 5.1); - Behavior under isolation failure (par. 5.2); - Detection of fault currents in the PV generator (par. 5.3); - Disconnection due voltage and frequency (par 5.4); - Automatic reconnection (par. 5.5); - Detection of island operation (par. 5.6); - Generation surges (par. 5.7); - Network quality (par. 5.8); - Reconnection out of sync (par. 5.9) 	UNE 206007-1 IN:2013
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Islanding prevention measures	ABNT NBR IEC 62116:2012
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Islanding prevention measures	IEC 62116:2014 EN 62116:2014
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<ul style="list-style-type: none"> - Misura di correnti armoniche (par.N.3.1); - Misura di fluttuazioni di tensione dovute a manovre di sezionamento/separazione (par.N.3.2); - Misura di fluttuazioni di tensione (flicker) in condizioni di funzionamento continuo (par.N.3.3); - Verifica del campo di funzionamento in tensione e frequenza (par.N.4); - Verifica delle condizioni di sincronizzazione e presa di carico (par.N.5); - Verifica dei requisiti costruttivi circa lo scambio di potenza reattiva (par.N.6); - Verifica dei requisiti costruttivi circa la regolazione di potenza attiva (par.N.7); - Verifica della insensibilità agli abbassamenti di tensione (VFRT capability) (par.N.8); - Verifica della insensibilità alle richiuse automatiche in discordanza di fase (par.N.9) - Misura di correnti armoniche (par.Nbis.3.1); - Misura di fluttuazioni di tensione dovute a manovre di sezionamento/separazione (par.Nbis.3.2); - Misura di fluttuazioni di tensione (flicker) in condizioni di funzionamento continuo (par.Nbis.3.3); - Verifica del campo di funzionamento in tensione e frequenza (par.Nbis.4); - Verifica delle condizioni di sincronizzazione e presa di carico (par.Nbis.5); - Verifica dei requisiti costruttivi circa lo scambio di potenza reattiva (par.Nbis.6); - Verifica dei requisiti costruttivi circa la regolazione di potenza attiva (par.Nbis.7); - Verifica della insensibilità agli abbassamenti di tensione (VFRT capability) (par.Nbis.8); - Verifica della insensibilità alle richiuse automatiche in discordanza di fase (par.Nbis.9) 	CEI 0-16:2014-09+V1:2014-12+V2:2016-07
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- Procedure of evaluation (par.4)	UNE 206006 IN:2011
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<ul style="list-style-type: none"> - Rapid Voltage changes (par.5.1.2) - Flicker (par.5.1.3) - Harmonics and inter-harmonics (par 5.1.4) - Proof of the symmetrical behavior of rotary current converter units (par.5.2) - Proof of the behavior of the generation unit on the grid (par. 5.3) - Proof of NS protection (par. 5.4) - Connection conditions and sincronization (par. 5.5) 	DIN V VDE V 0124-100 (VDE V 0124-100):2012
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- Tolerance of Frequency and Voltage Deviations (par.5);
- Frequency Response (par.6);
- Reactive Power Capabilities (par.7);
- Reactive Power and Voltage Control Functions (par.8);
- Power Quality (par.9);
- Protection and Fault levels (par.10);
- Active Power Constraint Functions (par.11)

GRID CONNECTION CODE FOR RENEWABLE POWER PLANTS (RPPs) CONNECTED TO THE ELECTRICITY TRANSMISSION SYSTEM (TS) OR THE DISTRIBUTION SYSTEM (DS) IN SOUTH AFRICA (Version 2.8 - 2014)

- Unintentional islanding test (par.5.7.1)

IEEE 1547.1:2005+IS1:2010

- Unintentional islanding test (par.5.7.1) (<120kVA)

IEEE 1547:2003

- Verification of the electrical properties (par.9);
- Islanding detection (Annex D)

VDE-AR-N 4105:2011

- Voltage, current and frequency (par.4.1);
- Normal voltage operating range (par.4.2);
- Flicker (par.4.3);
- DC injection (par.4.4);
- Normal frequency operating range (par.4.5);
- Harmonics and waveform distortion (par.4.6);
- Power factor (par.4.7);
- Loss of utility voltage (par.5.1);
- Over/under voltage and frequency (par.5.2);
- Islanding protection (par.5.3);
- Response to utility recovery (par.5.4) (Tutto tranne 5.5, 5.6, 5.7)

IEC 61727:2004
EN 61727:1995

Elettrodomestici, utensili elettrici e apparecchi similari / Household appliances, Electric tools and similiar apparatus

Denominazione della prova / Campi di prova

Metodo di prova

O&I

5.5.2 - Time domain evaluation of magnetic fields, 5.5.3 - Line spectrum evaluation, 5.5.4 - Simplified test methods

IEC 62233:2005
EN 62233:2008

Sicurezza degli apparati di conversione di potenza utilizzati in impianti fotovoltaici di Potenza. Parte 1: Prescrizioni generali

Denominazione della prova / Campi di prova

Metodo di prova

O&I

4 General testing requirements, 5 -Marking and documentation, 6 - Environmental requirements and conditions, 7 -Protection against electric shock and energy hazards, 8 - Protection against mechanical hazards, 9 Protection against fire hazards, 10 - Protection against sonic pressure hazards, 11 - Protection against liquid hazards, 12 - Chemical hazards, 13 Physical requirements, 14 - Components (eccetto 8.4, 8.5)

IEC 62109-1:2010
EN 62109-1:2010

Sicurezza dei convertitori di potenza utilizzati negli impianti Fotovoltaici. Parte 2: Prescrizioni particolari per gli inverter

Denominazione della prova / Campi di prova

Metodo di prova

O&I

4 General testing requirements, 5 -Marking and documentation, 6 - Environmental requirements and conditions, 7 -Protection against electric shock and energy hazards, 8 - Protection against mechanical hazards, 9 Protection against fire hazards, 10 - Protection against sonic pressure hazards, 11 - Protection against liquid hazards, 12 - Chemical hazards, 13 Physical requirements, 14 - Components - Tutto tranne 8.4, 8.5

IEC 62109-2:2011
EN 62109-2:2011

