



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

BUREAU VERITAS ADT (SHANGHAI) CORPORATION <sup>1</sup>  
No.829, Xin Zhuan Road, Song Jiang District, Shanghai, People's Republic of China

Ms. Olivia Gao (Authorized Representative) Phone: 86 21 37602699

Email: Olivia.Gao@cn.bureauveritas.com

Mr. James Xu (Deputy Authorized Representative) Phone: 86 21 37602700

Email: James-c.xu@cn.bureauveritas.com

Ms. Scarlett Si (Deputy Authorized Representative) Phone: 86 21 61927264

Email: Scarlett.Si@cn.bureauveritas.com

ELECTRICAL (EMC)

Valid to: August 31, 2023

Certificate Number: 2343.01

In recognition of the successful completion of the A2LA evaluation process (including an assessment of the organization's compliance with A2LA's EPA ENERGY STAR<sup>®</sup> Accreditation Program<sup>3</sup> requirements), accreditation is granted to the main laboratory location listed above, and the three satellite laboratory locations listed below, to perform the following tests:

**Test Technology:**

***Automotive EMC Tests***

Electrostatic Discharge (ESD)

**Test Method(s) <sup>2</sup>:**

SAE J1113-13; ISO 10605;  
Ford ES-XW7T-1A278-AB/AC;  
Ford EMC-CS-2009.1;  
GMW 3097 (2004/2006/2012);  
Hyundai/Kia ES 96200-00 (2015);  
Fiat 990110 01 (2007); Fiat 990111 01 (2010);  
Chrysler DC-10614; Chrysler CS-11979 (2010);  
Daimler MBN 10284-2 (2008);  
VW8246 (2009.06);  
BMW GS95002 (2004/2010);  
PSA B21 7110-E;  
Renault 36-00-808 (2016);  
Honda 7794Z\_S3V\_0000;  
DC-11224 (2007);  
Nissan 28401NDS02 [5]; MES PW 67602C;  
VW TL81000 (2013.02); VW TL81000(2014.04);  
EMC-CS-2010JLR V1.2;  
GMW 3097 (2015); GMW 3172 (2015);  
FMC1278 (2018);  
VW TL81000 (2016, 2018);  
JLR-EMC-CS v1.0;  
Fiat 9.90111/01 (2012);  
CS.00054 (2018);  
Nissan 28401NDS02 [8]; ES-X82114\_D;

**Test Technology:**

***Automotive EMC Tests (cont'd)***

Conducted Transient Emissions

**Test Method(s) <sup>2</sup>:**

ISO/IEC 7637-1 and -2;  
Daimler/Chrysler DC-10614 (2004);  
Chrysler CS-11979 (2010);  
Ford ES-XW7T-1A278-AB/AC;  
Ford EMC-CS-2009.1;  
GMW 3097 (2004/2006/2012); GMW3100 (2001);  
Fiat 990110 01 (2007); Fiat 990111 01 (2010);  
VW/Audi/Porsche TL82066 (2004/2006);  
BMW GS95002 (2004/2010);  
Renault 36-00-808 (2016);  
PSA B21 7110-E;  
Hyundai/Kia ES 96200-00 (2015);  
Daimler MBN 10284-2 (2008);  
Nissan 28401NDS02 [5];  
VW TL81000 (2013.02); VW TL81000(2014.04);  
GMW 3097 (2015);  
GMW 3172 (2015);  
FMC1278 (2018);  
VW TL81000 (2016, 2018);  
JLR-EMC-CS v1.0;  
Fiat 9.90111/01 (2012);  
CS.00054 (2018);  
Nissan 28401NDS02 [8];  
ES-X82114\_D

RF Conducted Emissions

CISPR 25; GB/T18655(2018);  
VW/Audi/Porsche TL965 (2004/2006/2009/2012);  
BMW GS95002 (2004/2010);  
Chrysler DC 11224 (2007);  
Chrysler CS-11979 (2010);  
Daimler MBN 10284-2 (2008);  
Ford ES-XW7T-1A278-AB/AC;  
Ford EMC-CS-2009.1;  
GMW 3097 (2004/2006/2012);  
Hyundai/Kia ES 96200-00 (2015);  
Fiat 990110 01 (2007); Fiat 990111 01 (2010);  
PSA B21 7110-E;  
Renault 36-00-808 (2016);  
Nissan 28401NDS02 [5];  
MES PW 67602C;  
VW TL81000 (2013.02);  
VW TL81000(2014.04);  
EMC-CS-2010JLR V1.2;  
GMW 3097 (2015); GMW 3172 (2015);  
FMC1278 (2018);  
VW TL81000 (2016, 2018);  
JLR-EMC-CS v1.0;  
Fiat 9.90111/01 (2012);  
CS.00054 (2018);  
Nissan 28401NDS02 [8];  
ES-X82114\_D



**Test Technology:**

***Automotive EMC Tests (cont'd)***

RF Radiated Emissions

Bulk Current Injection (BCI) –  
*Substitution Method*

**Test Method(s) <sup>2</sup>:**

CISPR 25; GB/T18655(2018);  
VW/Audi/Porsche TL965 (2004/2006/2009/2012);  
BMW GS95002 (2004/2010);  
Chrysler DC 11224 (2007);  
Chrysler CS-11979 (2010);  
Daimler MBN 10284-2 (2008);  
Ford ES-XW7T-1A278-AB/AC;  
Ford EMC CS 2009.1;  
GMW 3097 (2004/2006/2012);  
Hyundai/Kia ES 96200-00 (2015);  
Fiat 990110 01 (2007);  
Fiat 990111 01 (2010);  
PSA B21 7110-E;  
Renault 36-00-808 (2016);  
Nissan 28401NDS02 [5];  
MES PW 67602C;  
VW TL81000 (2013.02);  
VW TL81000(2014.04);  
EMC-CS-2010JLR V1.2;  
GMW 3097 (2015);  
GMW 3172 (2015);  
FMC1278 (2018);  
VW TL81000 (2016, 2018);  
JLR-EMC-CS v1.0;  
Fiat 9.90111/01 (2012);  
CS.00054 (2015);  
Nissan 28401NDS02 [8];  
ES-X82114\_D

ISO/IEC 11452-4;  
Chrysler DC-10614 (2004);  
Chrysler CS-11979 (2010);  
Fiat 990110 01 (2007); Fiat 990111 01 (2010);  
Daimler MBN 10284-2 (2008);  
Ford ES-XW7T-1A278 –AB/ AC;  
EMC-CS-2009.1;  
GMW 3097 (2004/2006/2012);  
VW/Audi/Porsche TL82166 (2004/2009/2011);  
BMW GS95002 (2004/2010);  
Honda 7794Z\_S3V\_0000;  
DC-11224 (2007);  
MES PW 67602C;  
EMC-CS-2010JLR V1.2;  
VW TL81000 (2013.02); VW TL81000(2014.04);  
EMC-CS-2010JLR V1.2;  
GMW 3097 (2015); GMW 3172 (2015);  
FMC1278 (2018);  
VW TL81000 (2016, 2018);  
JLR-EMC-CS v1.0;  
Fiat 9.90111/01 (2012);  
CS.00054 (2018);  
Nissan 28401NDS02 [8];  
ES-X82114\_D



**Test Technology:**

**Test Method(s) <sup>2</sup>:**

***Automotive EMC Tests (cont'd)***

Bulk Current Injection (BCI) –  
*Closed Loop*

SAE J1113-4;  
ISO/IEC 11452-4;  
Hyundai/Kia ES 96200-00 (2015);  
Fiat 990110 01 (2007);  
Fiat 990111 01 (2010);  
Chrysler CS-11979 (2010);  
PSA B21 7110-E;  
Renault 36-00-808 (2016);  
Nissan 28401NDS02 [8]

Transverse Electromagnetic (TEM) Cell  
*(200 V/m up to 400 MHz)*

ISO 11452-3;  
SAE J1113-24

Absorber-Lined Shielded Enclosure  
*(80 MHz to 4.2 GHz, up to 200 V/meter)*  
*Substitution Method & Metallic Table Top*

ISO 11452-2;  
ES-XW7T-1A278-AC (RI 114);  
Ford EMC CS 2009.1 (RI 114);  
GMW3097 (2004/2006/2012) Section 3.4.2;  
VW/Audi/Porsche TL965 (2004/2006/2009/2012);  
VW 82166 (2011);  
BMW GS95002 (2004/2010);  
Chrysler DC 11224 (2007);  
Daimler MBN 10284-2 (2008);  
Hyundai/Kia ES 96200-00 (2015);  
Fiat 990110 01 (2007);  
Fiat 990111 01 (2010);  
PSA B21 7110-E;  
Renault 36-00-808 (2016);  
Honda 7794Z\_S3V\_0000;  
Nissan 28401NDS02 [5];  
MES PW 67602B RI114;  
VW TL81000 (2013.02);  
VW TL81000(2014.04);  
EMC-CS-2010JLR V1.2 (RI114);  
GMW 3097 (2015);  
GMW 3172 (2015);  
FMC1278 (2018);  
VW TL81000 (2016, 2018);  
JLR-EMC-CS v1.0;  
Fiat 9.90111/01 (2012);  
CS.00054 (2018);  
Nissan 28401NDS02 [8];  
ES-X82114\_D



**Test Technology:**

***Automotive EMC Tests (cont'd)***

Conducted Immunity on Power lines  
Supply Voltage transients

**Test Method(s) <sup>2</sup>:**

SAE J1113-11; SAE J1113-12; SAE J1113-42;  
ISO 7637-2;  
ISO/IEC 7637-3;  
VW/Audi/Porsche TL82066 (2004/2006),  
VW80000 (2009);  
BMW GS95002 (2004/2010);  
BMW GS95024-2-1 (2010);  
Chrysler DC 11224 (2007); Chrysler CS-11979 (2010);  
Daimler MBN 10284-2 (2008);  
GMW 3097, Sections 3.5.2, 3.5.3, 3.5.4, 3.5.5;  
Hyundai/Kia ES 96200-00;  
Fiat 990110 01 (2007); Fiat 990111 01 (2010);  
PSA B21 7110 (2008);  
Renault 36-00-808 (2016);  
Honda 7794Z-S3V-0000;  
Nissan 28401NDS02 [5];  
MES PW 67602C;  
VW TL81000 (2013.02); VW TL81000(2014.04);  
GMW 3097 (2015); GMW 3172 (2015);  
FMC1278 (2018);  
VW TL81000 (2016, 2018);  
JLR-EMC-CS v1.0;  
Fiat 9.90111/01 (2012);  
CS.00054 (2018);  
Nissan 28401NDS02 [8];  
ES-X82114\_D

Conducted Immunity on Signal Lines

ISO 7637-3;  
SAE J1113-2;  
VW/Audi/Porsche TL82366 (2008);  
BMW GS95002 (2004/2010);  
Chrysler DC-10615 (2007);  
Chrysler CS-11979 (2010);  
Daimler MBN 10284-2 (2008);  
Hyundai/Kia ES 96200-00 (2015);  
Fiat 990110 01 (2007);  
Fiat 990111 01 (2010);  
GMW 3097 (2004/2006/2012);  
PSA B21 7110-E;  
Renault 36-00-808 (2016);  
Nissan 28401NDS02 [5];  
VW TL81000 (2013.02); VW TL81000(2014.04);  
GMW 3097 (2015); GMW 3172 (2015);  
FMC1278 (2018);  
VW TL81000 (2016, 2018);  
JLR-EMC-CS v1.0;  
Fiat 9.90111/01 (2012);  
CS.00054 (2018);  
Nissan 28401NDS02 [8];  
ES-X82114\_D



**Test Technology:**

***Automotive EMC Tests (cont'd)***

Immunity to Voltage Fluctuations,  
Disturbances Of The Supply Voltage  
Lines (Dropouts, Dips, Cranking, Ramp  
Up/Down)

Over/Under, Reverse, Jump Start,  
Defective Regulator Voltages, electrical  
stress

**Test Method(s) <sup>2</sup>:**

ISO 16750-2;  
DC-10615;  
Ford ES-XW7T-1A278-AB/AC;  
Ford EMC CS (CI210, CI220, CI230, CI250, CI260,  
CI270, RI130, RI150);  
GMW 3172 (2012);  
Honda 7794Z\_S3V\_0000;  
Hyundai/Kia ES 96200-00;  
Fiat 990110 01 (2007); Fiat 990111 01 (2010);  
BMW GS95003-2; BMW GS95024-2-1 (2010);  
VW/Audi/Porsche VW80101 (2006/2009/2011);  
VW80000 (2009);  
Renault 36-00-808 (2016);  
PSA B21 7110-E;  
Nissan 28401NDS02-4; Nissan 28401NDS02 [8];  
MES PW 67602C (CI210, CI220, CI230, CI250,  
CI260, CI270, CI290, RI130, RI150);  
EMC-CS-2010 JLR V1.2 (CI210, CI220, CI230,  
CI250, CI265, CI270, RI130, RI150);  
GMW 3097 (2015); GMW 3172 (2015);  
FMC1278 (2018);  
VW TL81000 (2016, 2018);  
JLR-EMC-CS v1.0;  
Fiat 9.90111/01 (2012);  
CS.00054 (2018);

ISO 16750-2;  
DC-10615;  
Ford ES-XW7T-1A278-AB/AC;  
Ford EMC-CS-2009.1;  
GMW 3172 (2012);  
Hyundai/Kia ES 96200-00 (2015);  
Fiat 990110 01 (2007);  
Fiat 990111 01 (2010);  
VW/Audi/Porsche VW80101 (2006/2009/2011);  
VW80000 (2009);  
Renault 36-00-808 (2016);  
PSA B21 7110-E;  
BMW GS95003-2, GS95024-2-1 (2010);  
Honda 7794Z\_S3V\_0000;  
Nissan 28401NDS02 [5];  
VW TL81000 (2013.02); VW TL81000 (2014.04);  
EMC-CS-2010 JLR V1.2;  
GMW 3097 (2015); GMW 3172 (2015);  
FMC1278 (2018);  
VW TL81000 (2016, 2018);  
JLR-EMC-CS v1.0;  
Fiat 9.90111/01 (2012);  
CS.00054 (2018);  
Nissan 28401NDS02 [8];



**Test Technology:**

**Test Method(s) <sup>2</sup>:**

***Automotive EMC Tests (cont'd)***

Hand Portable Transmitter Immunity Exposure

Ford EMC CS 2009.1 (RI 115);  
ISO 11452-9;  
EMC-CS-2010 JLR V1.2 (RI115);  
PSA B21 7110-E;  
GMW 3097 (2015);  
FMC1278 (2018);  
JLR-EMC-CS v1.0;  
Nissan 28401NDS02 [8]

Magnetic Field Emissions

VW TL81000 (2016);  
VW TL81000 (2018);  
GMW 3097 (2015);  
BMW GS95002 (2004/2010);  
Nissan 28401NDS02 [8];  
PSA B21 7110-E;  
Hyundai/Kia ES 96200-00 (2015);  
Renault 36-00-808 (2016);  
MIL-STD-461

Stripline

ISO 11452-5;  
VW TL81000 (2018)

Immunity to magnetic fields

ISO 11452-8;  
MIL-STD-461;  
VW/Audi/Porsche TL965 (2004/2006/2009/2012);  
BMW GS95002 (2004/2010);  
Chrysler DC 11224 (2007);  
Chrysler CS-11979 (2010);  
Daimler MBN 10284-2 (2019);  
Ford ES-XW7T-1A278-AB/AC;  
Ford EMC CS 2009.1;  
GMW 3097 (2004/2006/2012/2015/2019);  
Hyundai/Kia ES 96200-00 (2015);  
Fiat 990110 01 (2007) Fiat 990111 01 (2010);  
PSA B21 7110-E;  
Renault 36-00-808 (2016);  
Nissan 28401NDS02 [5/6/7/8];  
MES PW 67602C;  
VW TL81000 (2013/2014/2016/2018);  
EMC-CS-2010JLR V1.2;  
FMC1278 (2018);  
JLR-EMC-CS v1.0;  
Fiat 9.90111/01 (2012);  
CS.00054 (2015);  
ES-X82114\_D

Human exposure restrictions for electromagnetic fields

IEC 62311;  
FMC1278 (2018);  
PSA B21 7110-F



**Test Technology:**

**Test Method(s) <sup>2</sup>:**

***Emissions***

Radiated and Conducted

CFR 47 FCC Part 15B (using ANSI C63.4:2014; ANSI C63.4), and Part 18 (using MP-5:1986); CISPR 11; EN 55011; AS CISPR 11; BS EN 55011; CISPR 14-1; EN 55014-1; AS/NZS CISPR 14-1; BS EN 55014-1; CISPR 15; EN 55015; AS/NZS CISPR 15; BS EN 55015; CISPR 22; EN 55022; AS/NZS CISPR 22; CISPR 32; EN 55032; AS/NZS CISPR 32; BS EN 55032; VCCI CISPR 32; GB/T 9254; ICES-001; ICES-002; ICES-003; ICES-005; BETS-7; GR-1089-CORE, Issue 4, Section 3.2

Current Harmonics

EN IEC 61000-3-2; IEC 61000-3-2; BS EN IEC 61000-3-2; EN 61000-3-12; IEC 61000-3-12; BS EN 61000-3-12

Voltage Fluctuation and Flicker

EN 61000-3-3; IEC 61000-3-3; BS EN 61000-3-3; EN 61000-3-11; IEC 61000-3-11; BS EN 61000-3-11

***Immunity***

Electrostatic Discharge (ESD)

EN 61000-4-2; IEC 61000-4-2; BS EN 61000-4-2

Radiated Immunity  
(10 V/m up to 6.0GHz)

EN 61000-4-3; IEC 61000-4-3; BS EN 61000-4-3

Electrical Fast Transient/Burst

EN 61000-4-4; IEC 61000-4-4; BS EN 61000-4-4

Surge Immunity

EN 61000-4-5; IEC 61000-4-5; BS EN 61000-4-5  
IEEE STD C62.45

Conducted Immunity

EN 61000-4-6; IEC 61000-4-6; BS EN 61000-4-6

Power Frequency Magnetic  
Field Immunity

EN 61000-4-8; IEC 61000-4-8; BS EN 61000-4-8

Voltage Dips, Short Interruptions,  
and Line Voltage Variations

EN 61000-4-11; IEC 61000-4-11;  
EN 61000-4-29; IEC 61000-4-29;  
EN 61000-4-34; IEC 61000-4-34

***Telecommunications***

ETSI EN 300 386



**Test Technology:**

***Radio***

**Test Method(s) <sup>2</sup>:**

CFR 47 FCC Part 15C/E (using ANSI C63.10:2013);  
ANSI C63.10;  
KDB 558074; KDB 789033; KDB 905462 D02 (v02);  
RSS-210; RSS-247; RSS-216; RSS-GEN; RSS-310;  
RSS-102 (RF exposure evaluation); RSS-102 (NS);  
SPR-002 (Supplementary Procedure for Assessing  
Compliance with RSS-102 Nerve Stimulation  
Exposure Limits);  
EN 300 328; EN 301 893;  
EN 300 220-1/-2; EN 300 220-3-1/-2; EN 300 220-4;  
EN 300 330; EN 300 440;  
EN 303 413 ; EN 303 417;  
AS/NZS 4268; ARIB STD-T66; ARIB STD-T71;  
EN 50385; EN 62479; EN 62311;  
EN 50663; EN 50665;  
EN 303340; EN 303372-2;  
EN 301 511; EN 301 908-1; EN 302 065-1;  
EN 302 065-2; EN 302 065-3

***Generic and Product Specific Standards***

EN 301 489-3; EN 301 489-7; EN 301 489-17;  
EN 301 489-3; EN 301 489-7; EN 301 489-17;  
EN 301 489-1; EN 301 489-19; EN 301 489-50;  
EN 301 489-34; EN 301 489-33;  
EN 12015; EN 12016;  
EN 50121-1; EN 50121-2; EN 50121-3-1;  
EN 50121-3-2; EN 50121-4; EN 50121-5;  
EN 50130-4; EN 50155; EN 50293;  
EN 60255-26; EN 60974-10; EN 60601-1-2;  
BS EN 60601-1-2; EN 60669-2-1; IEC 60669-2-1;  
EN 60730-1; IEC 60730-1; EN 60730-2-7;  
IEC 60730-2-7; EN 60730-2-9; IEC 60730-2-9;  
EN 61058-1; IEC 61058-1;  
EN IEC 61000-6-1; EN IEC 61000-6-2;  
EN IEC 61000-6-3; EN IEC 61000-6-4;  
AS/NZS 61000.6.3; AS/NZS 61000.6.4;  
EN 62493; IEC 62493;  
EN 61131-2; EN 61204-3;  
EN 61326-1; EN 61326-2-1; EN 61326-2-2;  
EN 61326-2-3; EN 61326-2-4; EN 61326-2-5;  
EN 61543; EN 61547; EN 61800-3; EN 62040-2;  
IEC 60092-504; IEC 60255-26; IEC 60533;  
IEC 60601-1-2; IEC 60669-2-1; IEC 60974-10;  
IEC 61000-6-1; IEC 61000-6-2; IEC 61000-6-3;  
IEC 61000-6-4; IEC 61000-6-5;  
BS EN IEC 61000-6-1; BS EN IEC 61000-6-2;  
BS EN IEC 61000-6-3; BS EN IEC 61000-6-4;  
IEC 61131-2; IEC 61204-3; IEC 61326-1;  
IEC 61326-2-1; IEC 61326-2-2; IEC 61326-2-3;  
IEC 61326-2-4; IEC 61326-2-5;  
IEC 61543; IEC 61547; BS EN 61547;  
IEC 61800-3; IEC 62040-2; BS EN 62040-2;  
CISPR 14-2; EN 55014-2; BS EN 55014-2  
CISPR 24; EN 55024; GB/T 17618



**Test Technology:*****Generic and Product Specific Standards  
(cont'd)*****Test Method(s) <sup>2</sup>:**CISPR 35; EN 55035; BS EN 55035  
EN 61000-4-13; IEC 61000-4-13;  
EN 17128 (Clause 9); BS EN 17128 (Clause 9);  
EN 15194 (Clause 4.2.15)  
IEC 61851-21-2; EN IEC 61851-21-2;  
IEC 62920; EN 62920;  
BS EN 15194 (Clause 4.2.15)

<sup>1</sup> This accreditation covers testing performed at the main laboratory listed above as well as the satellite laboratories listed below.

<sup>2</sup>When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per part C., Section 1 of A2LA R101 - *General Requirements-Accreditation of ISO-IEC 17025 Laboratories*.

<sup>3</sup> A2LA provides accreditation to the U.S. EPA's [Conditions and Criteria for Recognition of Laboratories for the ENERGY STAR Program](#) by verifying an organization's compliance to A2LA document [R222 - Specific Requirements - EPA ENERGY STAR Accreditation Program](#) and to the related test methods listed on this laboratory's scope.

Accreditation by A2LA does not infer Recognition by the EPA for ENERGY STAR testing. Please verify this organization's recognition status by using the EPA's searchable database, located at [http://www.energystar.gov/index.cfm?fuseaction=recognized\\_bodies\\_list.show\\_RCB\\_search\\_form](http://www.energystar.gov/index.cfm?fuseaction=recognized_bodies_list.show_RCB_search_form)

Testing Activities Performed in Support of FCC Declaration of Conformity and Certification in Accordance with 47 Code of Federal Regulations and FCC KDB 974614, Appendix A, Table A.1 <sup>4</sup>:

<b>Rule Subpart/Technology</b>	<b>Test Method</b>	<b>Maximum Frequency (MHz)</b>
<u>Unintentional Radiators</u> Part 15B	ANSI C63.4:2014	40000
<u>Industrial, Scientific, and Medical Equipment</u> Part 18	FCC MP-5 (February 1986)	40000
<u>Intentional Radiators</u> Part 15C	ANSI C63.10:2013	40000
<u>U-NII without DFS Intentional Radiators</u> Part 15E	ANSI C63.10:2013	40000
<u>U-NII with DFS Intentional Radiators</u> Part 15E	FCC KDB 905462 D02 (v02)	40000

<sup>4</sup> Accreditation does not imply acceptance to the FCC equipment authorization program. Please see the FCC website (<https://apps.fcc.gov/oetcf/eas/>) for a listing of FCC approval laboratories.

**Test Technology:**

**Test Method(s) <sup>2</sup>:**

Battery test

IEC 62619, IEC 62620, IEC 62660-1, IEC 62660-2,  
IEC 62660-3, IEC 60086-1, IEC 60086-2, IEC 60086-3,  
IEC 60086-4, IEC 60086-5, IEC 62133-1, IEC 62133-2;  
UL 1642, UL 2054

Personal eMobility Devices

UL 2849, UL 2272; EN 17128

***EPA ENERGY STAR Testing***

**Electronics and Office Equipment**

Televisions

ENERGY STAR Program Requirements for Televisions;  
ENERGY STAR Test Method for Televisions

Displays

ENERGY STAR Program Requirements for Displays;  
ENERGY STAR Test Method for Determining Displays  
Energy Use V6.0

**Lighting Products**

Lamps (Light Bulbs)

Luminaires (Light Fixtures)

ENERGY STAR Program Requirements for Lamps;  
ENERGY STAR Program Requirements for Luminaires  
(Light Fixtures)

- Directional

IES LM-66;  
10 CFR Part 429 and Part 430 Appendix W to Subpart B;  
IES LM-79;  
IES LM-54;  
ENERGY STAR Elevated Temperature Light Output Ratio;  
CIE 15; CIE Pub No 13.3;  
ENERGY STAR Elevated Temperature Life Test;  
ENERGY STAR Ambient Temperature Life Test;  
IES LM-65;  
ANSI C82.2; ANSI C82.77;  
ENERGY STAR Start Time Test;  
ENERGY STAR Run Up Time Test;  
ANSI/IEEE C62.41.2

- Omnidirectional

IES LM-66;  
10 CFR Part 429 and Part 430 Appendix W to Subpart B;  
IES LM-79;  
IES LM-54;  
CIE 15; CIE Pub No 13.3;  
ENERGY STAR Elevated Temperature Life Test;  
ENERGY STAR Ambient Temperature Life Test;  
IES LM-65;  
ANSI C82.2-2002; ANSI C82.77;  
ENERGY STAR Start Time Test;  
ENERGY STAR Run Up Time Test;  
ANSI/IEEE C62.41.2

**Test Technology:**

**Test Method(s) <sup>2</sup>:**

**Lighting Products (*cont'd*)**

- Decorative

IES LM-66;  
10 CFR Part 429 and Part 430 Appendix W to Subpart B;  
IES LM-79; IES LM-54;  
CIE 15; CIE Pub No 13.3;  
ENERGY STAR Elevated Temperature Life Test;  
ENERGY STAR Ambient Temperature Life Test;  
IES LM-65;  
ANSI C82.2; ANSI C82.77;  
ENERGY STAR Start Time Test;  
ENERGY STAR Run Up Time Test;  
ANSI/IEEE C62.41.2

**General Lighting Tests**

Electrical and Photometric  
Measurements of Solid-State  
Lighting Products IES LM-79

Measuring Lumen Maintenance of  
LED Light Sources IES LM-80

Photometric Testing of Reflector-Type  
Lamps IES LM-20

Guide to Lamp Seasoning IES LM-54

Life Testing of Single-Based  
Fluorescent Lamps IES LM-65

Electrical and Photometric  
Measurements of Single-Based  
Fluorescent Lamps IES LM-66

Projecting Long-Term Luminous Flux  
Maintenance of LED Lamps and  
Luminaires IES TM-28

Measuring Luminous Flux and Color  
Maintenance of LED lamps, Light  
Engines, and Luminaires IES LM-84

Household electrical appliances –  
Measurement of standby power IEC 62301;  
CAN/CSA-C62301

Approved method for life testing of  
incandescent filament lamps IES LM-49

Characterization of LED Light Engines  
and LED Lamps for Electrical and  
Photometric Properties as a Function of  
Temperature IES LM-82

**Test Technology:**

**Test Method(s) <sup>2</sup>:**

**General Lighting Tests (*cont'd*)**

Temporal Light Artifacts: Test Methods and Guidance for Acceptance Criteria

NEMA 77

Uniform Test Method for Measuring the Input Power, Lumen Output, Lamp Efficacy, Correlated Color Temperature (CCT), Color Rendering Index (CRI), Power Factor, Time to Failure, and Standby Mode Power of Integrated Light-Emitting Diode (LED) Lamps

10 CFR Part 430 Appendix BB to Subpart B

Uniform Test Method for Measuring the Energy Consumption and Energy Efficiency of General Service Lamps That Are Not General Service Incandescent Lamps, Compact Fluorescent Lamps, or Integrated LED Lamps

10 CFR Part 430, Appendix DD to Subpart B

Uniform Test Method for Measuring the Energy Consumption of Fluorescent Lamp Ballasts

10 CFR Part 430, Appendix Q to Subpart B

Uniform Test Method for Measuring Average Lamp Efficacy (LE), Color Rendering Index (CRI), and Correlated Color Temperature (CCT) of Electric Lamps

10 CFR Part 430, Appendix R to Subpart B

Approved Method: Total Luminous Flux Measurement of Lamps Using an Integrating Sphere Photometer

IES LM-78

Technical Memorandum: Projecting Long Term Lumen, Photon and Radiant Flux Maintenance of LED Light Sources

IES TM-21

Test Method for Measuring Flicker of Lighting Systems and Reporting Requirements

CEC-400-2015-038-CMF, Appendix JA10;  
CEC-400-2018-021-CMF, Appendix JA10

**Test Technology:**

**Test Method(s) <sup>2</sup>:**

**General Efficiency Test**

Test Method for Calculating the Energy Efficiency of Single-voltage External AC-DC and AC-AC Power Supplies

CAN/CSA C381.1

Uniform Test Method for Measuring the Power consumption of Television

Appendix H to Subpart B, Part 430-Uniform Test Method for Measuring the power consumption of Television Sets

Test Method for Measuring the Energy Consumption of Battery Chargers

CAN/CSA C381.2  
Appendix Y to Subpart B, Part 430 of Title 10 to the United States Code of Federal Regulations, entitled Uniform Test Method for Measuring the Energy Consumption of Battery Chargers

Energy performance of televisions and displays

CAN/CSA C382

Uniform Test Method for Measuring the Energy Consumption of External Power Supplies

Appendix Z to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of External Power Supplies

South African national standard- Energy efficiency of electrical and electronic apparatus

SANS 941

<sup>2</sup> When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per part C., Section 1 of A2LA *R101 - General Requirements- Accreditation of ISO-IEC 17025 Laboratories*.



## Accredited Laboratory

A2LA has accredited

# BUREAU VERITAS ADT (SHANGHAI) CORPORATION

*Shanghai, People's Republic of China*

for technical competence in the field of

## Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the A2LA R222 – Specific Requirements – EPA ENERGY STAR Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 6<sup>th</sup> day of October 2021.

A handwritten signature in blue ink, positioned above a horizontal line.

Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 2343.01  
Valid to August 31, 2023



*For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.*