

No.	Material or product	Type of activity or property	Internal reference number or standard specification
Automotive emission measurements			
1	Electrical/ electronic sub-assembly	Conducted Emissions, Voltage method (AN)150 kHz to 108 MHz	document 877 According to CISPR 25
2		Conducted Emissions, Current method (Current Probe) 150 kHz to 108 MHz	document 879 According to CISPR 25
3		Radiated Emissions, Anechoic Chamber method 150 kHz to 1000 MHz	document 887 According to CISPR 25 97/24/EC, chapter 8, Annex V and VI Regulation No. 10, Annex 7 and 8 2004/104/EC, Annex VII and VIII
4	Motor vehicles	Radiated Emissions, Semi Anechoic Chamber method 30 MHz to 1000 MHz	document 885 According to CISPR 12 97/24/EC, chapter 8, Annex II and III Regulation No. 10, Annex 4 and 5 2004/104/EC, Annex IV and V
Automotive immunity tests			
5	Electrical/ electronic sub-assembly	Radiated Immunity, Anechoic Chamber method 200 MHz to 4 GHz up to 200 V/m	document 891 According to ISO 11452-2 97/24/EC, chapter 8, Annex VII Regulation No. 10, Annex 9 2004/104/EC, Annex IX
6		Radiated Immunity, (G)TEM cell method 100 kHz to 1000 MHz up to 200 V/m	document 893 According to ISO 11452-3

This annex has been approved by:

Ir. J.C. van der Poel
Chief Executive

No.	Material or product	Type of activity or property	Internal reference number or standard specification
7	Electrical/ electronic sub-assembly	Bulk Current Injection method 100 kHz to 1 MHz, up to 150 mA 1 to 400 MHz, up to 300 mA	document 875 According to ISO 11452-4 97/24/EC, chapter 8, Annex VII Regulation No. 10, Annex 9 2004/104/EC, Annex IX
8		Electrical transient conduction along supply lines only, 12V supply voltage	document 882 According to ISO 7637-1
9		Electrical transient conduction along supply lines only, 12V and 24V supply voltage	document 883 According to ISO 7637-2 2004/104/EC, Annex X
10		Electrical transient transmission, lines other than supply lines	document 884 According to ISO 7637-3
11	Motor vehicles	Radiated Immunity, Semi Anechoic Chamber method 20 MHz to 80 MHz up to 30 V/m 80 MHz to 4 GHz up to 50 V/m	document 889 According to ISO 11451-2 97/24/EC, Chapter 8, Annex IV Regulation No. 10, Annex 6 2004/104/EC, Annex VI

AEMCLRP Emission Measurements *

12	Electrical/ electronic sub-assembly	Conducted Emissions, Voltage method (AN) 150 kHz to 108 MHz	document 877 According to CISPR 25 Ford ES-XW7T-1A278-AC, section CE420 GMW3097, GMW3100
13		Conducted Emissions, Current method (Current Probe) 150 kHz to 108 MHz	document 879 According to CISPR 25
14		Radiated Emissions, Anechoic Chamber method 150 kHz to 2,5 GHz	document 887 According to CISPR 25 Ford ES-XW7T-1A278-AC, section RE310 GMW3097, GMW3100

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AEMCLRP immunity tests *			
15	Electrical/ electronic sub-assembly	Radiated Immunity, Anechoic Chamber method 200 MHz to 4 GHz, up to 200 V/m 1,2 to 1,4 GHz and 2,7 to 3,1 GHz up to 300 V/m	document 891 According to ISO 11452-2 Ford ES-XW7T-1A278-AC, section RI114 (radar limited to 300 V/m) GMW3097, GMW3100 (radar limited to 300 V/m)
16		Bulk Current Injection method 1 to 400 MHz, up to 300 mA	document 875 According to ISO 11452-4 /11452_4/W04_05_uk According to ISO 11452-4 Ford ES-XW7T-1A278-AC, section RI112 GMW3097, GMW3100
17		Electro Static Discharge immunity (ESD) Contact discharge: 0 ± 8 kV Air discharge: 0 ± 25 kV	document 881 According to ISO 10605 Ford ES-XW7T-1A278-AC, section CI280 GMW3097, GMW3100
EMC emission measurements			
18	Electric- and electronic equipment	Conducted Emissions, Voltage method (LISN) 9 kHz to 30 MHz	document 850 According to EN 55016-2-1 EN 55011, EN 55014-1, EN 55015, EN 55022
19		Conducted Discontinue Disturbances (clicks), Voltage method (LISN) 150 kHz to 30 MHz	document 846 According to EN 55016-2-1 EN 55014-1
20		Conducted Emissions, Voltage method (Voltage probe) 150 kHz to 30 MHz	document 852 According to EN 55016-2-1 EN 55011, EN 55014-1, EN 55015
21		Conducted Emissions, Current method (Current probe) 150 kHz to 30 MHz	document 848 According to EN 55016-2-1, EN 55022
22		Conducted Emissions, Disturbance power method (Absorber clamp) 30 MHz to 300 MHz	document 854 According to EN 55016-2-2 EN 55014-1

No.	Material or product	Type of activity or property	Internal reference number or standard specification
23	Electric- and electronic equipment	Radiated Emissions, OATS/Semi Anechoic Chamber method, 30 MHz to 1GHz	document 841/868 According to EN 55016-2-3 EN 55011, EN 55022
24		Radiated Emissions, Full Anechoic Chamber method 30 MHz to 18GHz	document 864 According to EN 55016-2-3 EN 55011, EN 55022
25		Radiated Emissions, Semi Anechoic Chamber method 9 kHz to 30 MHz	document 870 According to EN 55016-2-3 EN 55011
26		Radiated Emissions, Van Veen Loop method 9 kHz to 30 MHz	document 866 According to EN 55016-2-3 EN 55011, EN 55015
27		Harmonic Current Emissions 0 Hz to 2 kHz	document 862 According to EN 61000-3-2
28		Voltage Fluctuations and Flicker	document 860 According to EN 61000-3-3

EMC Immunity tests

29	Electric- and electronic equipment	Electro Static Discharge immunity (ESD) Contact discharge: 0 ± 8 kV Air discharge: 0 ± 15 kV	document 859 According to EN 61000-4-2
30		Radiated electromagnetic field immunity, Anechoic Chamber method 26 MHz to 80 MHz: 3 V/m 80 MHz to 4 GHz: 30 V/m	document 872 According to EN 61000-4-3
31		Electrical Fast Transient/burst (EFT) immunity	document 858 According to EN 61000-4-4
32		Surge immunity	document 874 According to EN 61000-4-5
33		Immunity to conducted disturbances 150 kHz to 230 MHz 30 Vrms	document 856 According to EN 61000-4-6

No.	Material or product	Type of activity or property	Internal reference number or standard specification
Radio measurements			
34	Electric- and electronic wide band radio equipment	Range of modulation bandwidth	document 922 According to EN 300 220-1
35	Electric- and electronic radio equipment	Effective radiated power and spurious emissions, Anechoic Chamber method, 30 MHz to 18 GHz	document 918 According to ETR 027, EN 300 220-1
36		Frequency error, 10 Hz to 18 GHz	document 920 According to ETR 027, EN 300 220-1
37		Carrier power (conducted) 150 kHz to 18 GHz	document 916 According to ETR 027, EN 300 220-1
Safety tests and measurements			
38	Information technology equipment including office equipment -Electrical equipment for measurement, control and laboratory use - Medical electrical equipment -Household and similar electrical appliances -Luminaries	Input power measurement	document 1039 According to EN 60950-1, EN 61010-1, EN 60601-1, EN 60335-1, EN 60598-1
39		Humidity test	document 1051 According to EN 60950-1, EN 61010-1, EN 60601-1, EN 60335-1, EN 60598-1
40		Creepage and clearance measurement	document 1029 According to EN 60950-1, EN 61010-1, EN 60601-1, EN 60335-1, EN 60598-1
41		Distance trough insulation measurement	document 1022 According to EN 60950-1, EN 61010-1, EN 60601-1, EN 60335-1, EN 60598-1
42		Stability measurement	document 1047 According to EN 60950-1, EN 61010-1, EN 60601-1, EN 60335-1, EN 60598-1
43		Mechanical strength of housing test	document 1031 According to EN 60950-1, EN 61010-1, EN 60601-1, EN 60335-1, EN 60598-1
44		(Earth) Leakage current measurement	document 1035 According to EN 60950-1, EN 61010-1, EN 60601-1, EN 60335-1, EN 60598-1

No.	Material or product	Type of activity or property	Internal reference number or standard specification
45	-Information technology equipment including office equipment	Abnormal operation and single fault conditions	document 1020 According to EN 60950-1, EN 61010-1, EN 60601-1, EN 60335-1, EN 60598-1
46	-Electrical equipment for measurement, control and laboratory use -Electrical equipment of machines	Capacitance discharge measurement	document 1043 According to EN 60950-1, EN 61010-1, EN 60204-1, EN 60601-1, EN 60335-1, EN 60598-1
47	-Medical electrical equipment -Household and similar electrical appliances -Luminaries	Earth resistance measurement	document 1033 According to EN 60950-1, EN 61010-1, EN 60204-1, EN 60601-1, EN 60335-1, EN 60598-1
48		Reverse current of lithium battery measurement	document 1045 According to EN 60950-1, EN 61010-1, EN 60204-1, EN 60601-1, EN 60335-1, EN 60598-1
49		Dielectric and electric strength test	document 1027 According to EN 60950-1, EN 61010-1, EN 60204-1, EN 60601-1, EN 60335-1, EN 60598-1
50	- Electrical equipment of machines -Luminaries	Insulation resistance test	document 1037 According to EN 60204-1, EN 60598-1
51	- Information technology equipment including office equipment - Electrical equipment for measurement, control and laboratory use -Luminaries	Temperature test	document 1041 According to EN 60950-1, EN 61010-1, EN 60598-1
52	Household and similar electrical appliances	Water spillage test	document 1053 According to EN 60335-2-15, clause 15.102
53		Boiling dry protection test	document 1025 According to EN 60335-2-15, clause 19.102
54		Endurance test	document 1026 According to EN 60335-2-15, clause 22.103

No.	Material or product	Type of activity or property	Internal reference number or standard specification
55	Household and similar electrical appliances	Degree of protection provided by enclosures (IP)	document 1024 According to EN 60529, clauses 14.2.3, 14.2.4 and 14.2.5 EN 60950-1, EN 61010-1, EN 60204-1, EN 60601-1, EN 60335-1, EN 60598-1

EMC FCC emission measurements

56	Electric- and electronic equipment, unintentional radiators	Conducted Emissions, Voltage method (LISN) 10 kHz to 30 MHz	document 911 According to ANSI C63.4 According to FCC MP-5, 47 CFR 15, 47 CFR 18
57		Radiated Emissions, OATS/Semi Anechoic Chamber method 30 MHz to 8 GHz	document 913/1129 According to ANSI C63.4 According to FCC MP-5 47 CFR 15, 47 CFR 18

EMC emission measurements on-site

58	Electric- and electronic equipment	Conducted Emissions, Voltage method (LISN) 150 kHz to 30 MHz	document 899 According to EN 55016-2-1, EN 55011
59		Conducted Emissions, Voltage method (Voltage probe) 150 kHz to 30 MHz	document 901 According to EN 55016-2-1, EN 55011
60		Radiated Emissions, 30 MHz to 1GHz	document 907 According to EN 55016-2-3, EN 55011

EMC Immunity tests on-site

61	Electric- and electronic equipment	Electro Static Discharge immunity (ESD) Contact discharge: 0 ± 8 kV Air discharge: 0 ± 15 kV	document 906 According to EN 61000-4-2
62		Radiated electromagnetic field immunity, 80 MHz to 1 GHz: 10 V/m	document 909 Inhouse method
63		Electrical Fast Transient/burst (EFT) immunity	document 905 According to EN 61000-4-4
64		Immunity to conducted disturbances 150 kHz to 80 MHz 10 Vrms	document 903 Equivalent to EN 61000-4-6

Annex to ISO/IEC 17025 Accreditation
with number: **L 279**

of **D.A.R.E!! Consultancy**
Woerden

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* This laboratory is accredited according the Automotive EMC Recognition Program (AEMCLRP).
In addition to the general requirements, specific FORD OEM and General Motors OEM
requirements are used.