

OUR REF : XB3-G0395

Ms. Annette Hebert, Chief
New Vehicle/Engine Programs Branch
Mobile Source Operations Division
State of California
Air Resources Board
9528 Telstar Avenue
E1 Monte, California 91731
U. S. A.

September 16, 2010

Dear Ms. Hebert:

RE: ARB Test Waiver Request– 2011MY

We are submitting the “ARB TEST WAIVER REQUEST” sheet for the following model in accordance with your request.

<u>MY</u>	<u>Models Covered</u>	<u>Test Group</u>
2011	NISSAN LEAF	BNSXV0000LLA

Your prompt approval will be highly appreciated.

If you have any questions or comments, please contact Mr. Yamada at (248)488-4654, e-mail yamaday@nrd.nissan-usa.com or Mr. Khan at (248)488-4649, e-mail KhanF@nrd.nissan-usa.com of Nissan Technical Center North America, Inc.

Very truly yours,



Kazuhiro Murata
Manager
Global Government Affairs Dept.
Environmental and Safety
Technologies

ARB TEST WAIVER REQUEST

Manufacturer : NISSAN MOTOR CO., LTD
 Test Group : BNSXV0000LLA
 CID-Type : NA
 ECS (Special Features) : NA

Model	Engine Codes	Engine Code Sales	Trans.	Test Vehicle ID	ETW (lbs)	TRLHP (Hp)	N/V	All-Electric Range Test (mile)			
								UDDS		HWY	
								Mfr	EPA	Mfr	EPA
LEAF	EVAA1	2390	Auto (Fixed single Speed)	KLC221(00) "D" mode	3750	12.5	111.1	111.7	*	94.9	*
				KLC221(01) "ECO" mode	3750	12.5	111.1	113.7	*	97.1	*

REMARKS : * The date of EPA Confirmatory test is under scheduling. (mid Oct,2010)

<u>Revision Date</u>	<u>Revision Page (*; New page)</u>	<u>Description of Revision</u>
12/15/10	Cover Page SEC7 SEC16(12)-2	Addition of EPA confirmatory test results.
	SEC12(3) SEC12(4)-1	Correction of Trim Line due to typo.

Application For Certification Part1

Individual application for 2011 Model Year

Durability Group : BNSXEEENN000
Evaporative / Refueling Family : NA
Test Group : BNSXV0000LLA
Test Group Description : BEV (Battery Electric Vehicle)
LDV (Fed) / PC (Cal)
Applicable Standard : Tier2 Bin1, CFV ZEV ILEV(Fed) / LEV-II ZEV(Cal)
Vehicles Covered : NISSAN LEAF (50 States)
Vehicles Run (Mfr) : KLC221-00 (UDDS TN:BNSX10011452)
: KLC221-00 (HWY TN:BNSX10011453)
: KLC221-01 (UDDS TN:BNSX10011454)
: KLC221-01 (HWY TN:BNSX10011455)
1/ (EPA) : KLC221-00 (UDDS TN:BNSX10012314)
: KLC221-00 (HWY TN:BNSX10012316)
: KLC221-01 (UDDS TN:BNSX10012324)
: KLC221-01 (HWY TN:BNSX10012323)
Issue Date : September 16, 2010
Response Requested By : October 28, 2010
For Questions, Contact : Yukiyo Yamada Telephone No. 248-488-4654

EPA Test Pending Conditional Cert Requested

Part1
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SEC5

5. Test Group Description

<u>Test Group Name</u>	<u>Fuel</u>	<u>Sales area</u>	<u>Vehicle Class</u>	<u>Emission St'd Class</u>
BNSXV0000LLA	Electricity	50 states	LDV (Fed) PC (Cal)	Tier2 Bin1/ CFV ZEV, ILEV(Fed) LEV-II ZEV(Cal)

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SEC6

6. Test Vehicle Description

Vehicle Class	Model Covered	Engine Code	Motor Model	Transmission	ETW (LBS)	Axle Ratio	Tire (Mfr)
LDV(Fed) PC(Cal)	LEAF	EVAA1	EM61	Auto (Fixed single Speed)	3750	7.937	P205/55R16

For other informations, refer to the Vehicle Information (VI) submitted to VERIFY for the complete vehicle description

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SEC7

7. Test Results 1/

<u>Test Loc.</u>	<u>Test Number</u>	<u>Mode</u>	<u>Sales Area</u>	<u>Official Test (marked by X)</u>
Mfr	BNSX10011452	UDDS All-Electric Range Test "D" mode	50 states	
Mfr	BNSX10011453	Hwy All-Electric Range Test "D" mode	50 states	
Mfr	BNSX10011454	UDDS All-Electric Range Test "ECO" mode	50 states	
Mfr	BNSX10011455	Hwy All-Electric Range Test "ECO" mode	50 states	
EPA	BNSX10012314	UDDS All-Electric Range Test "D" mode	50 states	X
EPA	BNSX10012316	Hwy All-Electric Range Test "D" mode	50 states	X
EPA	BNSX10012324	UDDS All-Electric Range Test "ECO" mode	50 states	X
EPA	BNSX10012323	Hwy All-Electric Range Test "ECO" mode	50 states	X

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SEC9,10

9. OBD System Description

Refer to the confidential section. Sec 16 (1)

10. Description of Alternate-fueled Vehicles

Refer to the confidential section. Sec 16 (10)

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SEC11(2)

11. AECD Description

Refer to the confidential section. Sec 16 (11)

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Issue Date : Refer to cover page

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12. Description of Vehicles Covered by Certificate and Test Parameter

(3) List of Certified Vehicles

Durability Group : BNSXEEENN000
 Test Group : BNSXV0000LLA

[Vehicle Identification]		Trans./OD	Engine Code	Fuel	ETW (lbs)	Sales Area	SIL	Battery Capacity(kWh)	Vehicle Class
Carline	Trim Line	Auto	EVAA1	Electricity	3750	50S	N.A.	24	LDV(Fed) PC(Cal)
LEAF	1/ SV, 1/ SL, ETEC	(Fixed single Speed)							

[Propulsion system]		Rated Power (kW)	Rated Torque (Nm)	Maximum (rpm)	Number of per vehicle	Drive type	-Traction Inverter Type	Modulation
-Motor	Model	Type						
	EM61	DCPM	80 @2730-9800rpm	280 @0-2730rpm	10,390	1	Front Wheel Drive	DC/AC 3phase PWM

-Battery
 Refer to the confidential section. Sec16(12)-1

-Regenerative Braking		
Type	Braking Source	Driver controlled Regen Braking
Electrical Regen. Brake	Front Wheels	None

-Standard Charger (Level 1)			
Type	Input Voltage(V)		
Conductive	On-board	100-240V, <20A	AC 50/60Hz

[Other system]
 -Climate control system
 The climate control system equipped with electric motor-driven compressor/ PTC heater system with water loop.
 The system uses HFC134a refrigerant and operates on 12volts DC/ 345 volts AC.
 The vehicle are also equipped with a "pre-conditioning" system that turns on air conditioning system before passengers enter the car.
 The vehicle is not equipped with a fuel-fired heating system.

SEC12(4)-1

12. Description of Vehicles Covered by Certificate and Test Parameter

(4) Test Parameter

Durability Group : BNSXEEENN000

Test Group : BNSXV0000LLA

Carline	Trim Line	Trans.	ETW (lbs)	Tire		Axle Ratio	N/V Ratio	TRLHP	Coastdown Time (sec.)	Single Roll Dyno Terms			Shift Schedule ID		Cooling Fan	Special Test
				Size	Maker					A	B	C	City	Hwy	Config	Proc
LEAF	<u>1</u> / SV, <u>1</u> / SL, ETEC	Auto (Fixed single Speed)	3750	P205/55R16	Bridgestone	7.937	111.1	12.5	18.53	33.78	0.0618	0.02282	FTA	HWA	*1	*2

*1: One centered front fan, in down position.

*2: Set in maintenance mode. Refer to SEC12(1)

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12. Description of Vehicles Covered by Certificate and Test Parameter

(4) Test Parameter

Testing Related Information

-Charging procedure

- 1) Push the start button twice without brake pedal on to weak up the vehicle system
- 2) Move the shift lever to the "P" position.
- 3) Push the start button once to shut off the vehicle system.
- 4) To open the charge port access door, push the release switch.
- 5) Remove the charge connector from holster. All of the indicator display lamps come on and then go off.
- 6) Fully insert the charge connector into the charge port. When the charge connector is set correctly, vehicle answer one beep.
- 7) Charging begins automatically. The "CHG" indicator display comes on.
- 8) When the batteries are fully charged; the indicator display SOC meter lamps all come on and the "CHG" lamp goes off.
- 9) Remove the charge coupler from the charge port. Make sure to firmly secure the charge coupler in its holster.
- 10) Close the charge port access door on vehicle.

-Load setting for dyno procedure

Caution; Auto P cancel function is installed the production vehicle by the demand of the factory.

This operates from outside PC, and makes the function effective.

Certification vehicle also is working this function to move by hand.

- 1) Push the start button twice without brake pedal on to weak up the vehicle system
- 2) Move the shift lever to the "N" position
- 3) Push the start button once to shut off the vehicle system.
- 4) Vehicle can move by hand because park lock never working.

-Safe handling of battery system Information

When working on high voltage cable, wear antistatic boots and insulated gloves. And remove the Shut Down switch.

If high voltage battery is damaged, there is a risk of short circuit to vehicle body due to leakage of electrolyte, and it is necessary to beware of electric shock.

When damaged, the battery may emit white fumes (vaporized electrolyte) due to short circuit.

- > If this happens, cool the battery with hose streams.
- > Since electrolyte is flammable, fire sources are prohibited.
- > Electrolyte liquid and vapor are not toxic, but must not be directly inhaled in large quantities.

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12. Description of Vehicles Covered by Certificate and Test Parameter

(4) Test Parameter

Testing Related Information

-System Warning Device Information




This EV has 3 indicating devices for warnings specific to EV.

"FAIL" as warning device for the existence of a vehicle malfunction, and the impossibility of vehicle running .

"CAUTION" as warning device for the existence of a vehicle malfunction and the possibility of vehicle running .

"FAIL" and "CAUTION" are same indicator behavior. The difference is run or not.

"SLOW DOWN" which is marked with the figure of TURTLE as warning device for the lowering of acceleration performance.

TYPE		FAIL	CAUTION	SLOW DOWN
Symbol				
	Traveling	IMPOSSIBLE	POSSIBLE	POSSIBLE
	Repair	Required	Required	Not-required
	Acceleration performance	Impossible to run	Depend upon condition	SLOW DOWN
	User's responsibility	Repair	Repair	Changing or Cooling the Vehicle

-Emergency procedures

When an accident happens:

- > Stop the car to the safe place.
- > Turn key off
- > Rescue injured persons if there any.
- > Please call emergency (911).
- > Please call the LEAF customer support center of Nissan.

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14. Request for Certification

Request for Certificate to ARB

Test Group : BNSXV0000LLA
Exhaust emission control system number : 1 of 1
Evaporative/Refueling Family : N.A.
Carline : LEAF

Nissan Motor Co., Ltd requests that ARB issue a 2011 model year certificate of conformity for the above specified test group and evaporative/refueling family combination more fully described in this application. This combination complies with the following applicable emission standard:

Federal : X
California & 177 States : X

This combination complies with all applicable regulations contained within 40 CFR Part86, the application is current as of this date.
The exhaust and evaporative/refueling emission test results support this request for certificate.



Kazuhiro Murata
Manager
Global Government Affairs Dept.-
Environmental and Safety
Technologies

BNSXV0000LLA
Issue Date : Refer to cover page
Revision Date :

14. Request for Certification

Request for Certificate to EPA

Test Group : BNSXV0000LLA
Exhaust emission control system number : 1 of 1
Evaporative/Refueling Family : N.A.
Carline : LEAF

Nissan Motor Co., Ltd requests that EPA issue a 2011 model year certificate of conformity for the above specified test group and evaporative/refueling family combination more fully described in this application. This combination complies with the following applicable emission standard:

Federal : X
California & 177 States : X

This combination complies with all applicable regulations contained within 40 CFR Part86, the application is current as of this date.
The exhaust and evaporative/refueling emission test results support this request for certificate.



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BNSXV0000LLA
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SEC15(1)

15. Other Information

(1) Fee Filing Form

Refer to the attached Fee Filing Form

BNSXV0000LLA

Issue Date : Refer to cover page

Revision Date :



**U.S. ENVIRONMENTAL PROTECTION AGENCY
MOTOR VEHICLE AND ENGINE COMPLIANCE PROGRAM
ON-HIGHWAY FEE FILING FORM
FOR CERTIFICATION APPLICATIONS RECEIVED IN CALENDAR YEAR 2010**

Manufacturer Name **NISSAN MOTOR CO., LTD**

Address **560-2, Okatsukoku**

City/State/Zip Code/Country **Atsugi - city / Kanagawa - pre. / 243-0192 / Japan**

On-Highway Certification Request Type (check one)

- | | |
|--|---|
| <input checked="" type="checkbox"/> LDV/LDT/MDPV/HDV (Chassis cert) FEDERAL (\$34,849) | <input type="checkbox"/> HDV EVAP-ONLY (\$511) |
| <input type="checkbox"/> LDV/LDT/MDPV/HDV (Chassis cert) CAL-ONLY (\$17,591) | <input type="checkbox"/> HDE CALIF-ONLY (\$511) |
| <input type="checkbox"/> HDE (Engine Dyno cert) FEDERAL (\$35,967) | <input type="checkbox"/> MOTORCYCLE (\$1,210) |
| | <input type="checkbox"/> LD/MDPV/HDV ICI (\$47,928) |

EPA standard engine family or test group or HDV Evaporative family name:

B	N	S	X	V	0	0	0	0	L	L	A
---	---	---	---	---	---	---	---	---	---	---	---

Amount paid (U.S. Funds Only):

\$ 34,849.00

Enter the check number, or the statement "EFT/WIRE" or "EFT/ACH":

EFT/WIRE

Reduced Fee Section (40 CFR §1027.120)

Reduced fee calculation (minimum initial payment \$750): Total number of vehicles/engines covered: _____
 Aggregate retail sales price of the vehicles/engines: \$ _____ x 1% = \$ _____
 Check box if an Independent Commercial Importer: List the VIN of imported vehicles/engines below:

Company Representative: Kazuhiro Murata Signature: *Kazuhiro Murata*

Title: Manager Phone/Fax: +81-46-270-1257 / +81-46-282-8330 Date: 4 / 8 / 2010

E-mail Address: k-murata@mail.nissan.co.jp

Submission of payments and forms:

- (1) Online: Forms may be found and submitted with or without payments online at www.Pay.gov.
- (2) Send checks and this form to:

Environmental Protection Agency
 Motor Vehicle and Engine Compliance Program
 P.O. Box 979032
 St. Louis, MO 63197-9000

- (3) Transmit offline EFT/Wire payments to the New York Federal Reserve Bank. (See Instructions, p.2)
- (4) Transmit offline EFT/ACH payments to the Federal Reserve Bank of Cleveland. (Instructions, p.2)
- (5) Forms not submitted under (1) and (2) above can be sent as email attachments to Fees@epa.gov. Forms and payments sent in ways other than the above may be delayed or ineffective. See the Instructions for sending checks and forms by private mail service (e.g., Federal Express).

The public reporting and recordkeeping burden for this collection of information is estimated to average 18 minutes per response. Send comments on EPA's need for this information, the accuracy of the provided burden estimate, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques, to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., N.W., Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed Form 3520-29 to this address.

Application For Certification Part2

Individual application for 2011 Model Year

Durability Group : BNSXEEENN000
Evaporative / Refueling Family : NA
Test Group : **BNSXV0000LLA**
Test Group Description : BEV (Battery Electric Vehicle)
LDV (Fed) / PC (Cal)
Applicable Standard : Tier2 Bin1, CFV ZEV ILEV(Fed) / LEV-II ZEV(Cal)
Vehicles Covered : NISSAN LEAF (50 States)
Issue Date : December 15, 2010
For Questions, Contact : Yukiyo Yamada Telephone No. 248-488-4654

NISSAN MOTOR CO., LTD

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SEC1

1. Part numbers for LEAF

<u>Engine code</u>	<u>Vehicle Controller</u>	<u>Motor Controller</u>	<u>Charger Controller</u>	<u>Battery Controller</u>	<u>Main Battery</u>
EVAA1	MEV01-050	291A0 3NA0	296A0 3NA0	293A0 3NA0	295B0 3NA0

*The parts with plural establishment have the same calibration and performance, even though the parts manufactures are different.

**The figures and numbers in the place of the mark x are variable according to a lot number and production date.

BNSXV0000LLA

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2. Calibration Information for LEAF

All electric operations are controlled by electric control module.
Calibration is identified parts number.

BNSXV0000LLA

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SEC3

3. Detailed Description of Vehicles Covered by Certificate and Test Parameter

(1) Updated List of Certified Vehicles

Refer to the Individual application, Sec. 12 in Part1

(2) Updated Test Parameter

Refer to the Individual application, Sec. 12 in Part1

(3) Basic Information about Engine Code

<u>Model Name</u>	<u>Engine Code</u>	<u>Motor</u>		<u>Battery</u>	
		<u>Model</u>	<u>Controller</u>	<u>Type</u>	<u>Measured amount of discharged energy(1/3c)(kWh)</u>
LEAF	EVAA1	EM61	291A0 3NA0	Lithium Ion	24

BNSXV0000LLA

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7. California ARB information

(1)-1. MIL Display

BEV is exempted from OBD requirement.

BNSXV0000LLA

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7. California ARB information

(1)-2. Fuel Cap Indicator Display

BEV is exempted from OBD requirement.

SEC7(2)-1

7. California ARB information

(2)-1. Long-Term Emission System Defect Warranty Parts List

N.A.

BNSXV0000LLA

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SEC7(2)-2

7. California ARB information

(2)-2. High-Cost Warranty Parts List

N.A.

BNSXV0000LLA

Issue Date : Refer to cover page

Revision Date :

7. California ARB information

(3) "Vehicle Emission Control Information" Label Sample

VEHICLE EMISSION CONTROL INFORMATION		NISSAN MOTOR CO.,LTD
Conforms to regulations:		2011 MY
U.S. EPA:	T2B1,CFV-ZEV/ILEV LDV	OBD:N/A
California:	ZEV PC	OBD:N/A
NO ADJUSTMENTS NEEDED		
Group: BNSXV0000LLA Evap: N/A		3NA0B

BNSXV0000LLA

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