

Power Electronics Tests

Novika has a wide range of testing installations, allowing characterization and tests of various high power devices. The power electronics lab is equipped with a variable DC voltage source (1000 V/250 A/100 kW max.) a 3-phase programmable voltage source with variable frequency of 30 kVA. It has a complete set of high precision measuring equipment capable of analyzing waves and currents produced by the devices under tests, power factors, harmonic distortion rates, available vs apparent power, and so on. Novika's personnel will define a test plan adapted to the needs of the client.



Acoustic Tests

Novika has the necessary expertise and equipment for carrying out various tests in the industrial and environmental acoustic domain. Specialized measurement equipment and access to the anechoic and reverberant chambers enable the following services:

Industrial and environmental acoustic

- Acoustic mapping of multiple sources
- verification of legal requirements
- soundproofing of products, systems and processes
- soundproofing of rooms: screens, absorption, propagation
- measurement and optimization of soundproofing walls
- evaluation of power spectra and acoustic sources
- measurement and acoustic and electro-acoustic specifications of sound systems
- conformity evaluation of a site according to standards

Custom Training

- industrial soundproofing
- industrial acoustic metrology
- environmental acoustic metrology

Environmental Tests

The Controlled Atmosphere Chamber

Novika's controlled atmosphere chamber enables various cyclic testing for complex thermal profiles on equipment weighing up to 45.4 kg (100 lbs). The climatic chamber meets the performance standards of international organizations such as IEC, MIL-STD and JEDEC. With high precision, it covers a wide temperature range for thermal and frigorific testing, with or without controlled humidity. The main features of the chamber are:



- inner dimensions of 100 cm x 80 cm x 100 cm (39.4" x 31.5" x 39.4")
- inner capacity of 800 l (28 pi³)
- a temperature range of -70 to 180°C (-94 to 356°F)
- a cooling capacity of 2.5 kW at -50°C (-58°F)
- a humidity range from 10 to 95%

PLEASE CONTACT US FOR MORE INFORMATION :

Luc Landry, ing.
Manager - Electrical Engineering
llandry@novika.ca

129, rue du Parc-de-l'Innovation
La Pocatiere (Quebec) G0R 1Z0



Phone : (418) 856-4350 #109



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ELECTROMAGNETIC COMPATIBILITY (EMC) AND ELECTRICAL SAFETY TESTS



**ACOUSTIC TESTS
ENVIRONMENTAL TESTS
POWER ELECTRONICS TESTS**

A complete service for reliable and efficient electrical and electronic products

www.novika.ca

Electromagnetic Compatibility (EMC) and Electrical Safety Tests

Since the middle of the 90's, Novika Solutions has been offering services in electromagnetic compatibility (EMC) and product safety compliance. These services aim to help industrial partners provide products that conform to standards and offer optimal solutions for electrical or electronic installations or equipment.

Early identification and troubleshooting of non-conformities related to EMC and electrical safety are essential for marketing products that respect various regulatory issues (CSA, UL, CENELEC, etc). Moreover, early resolution is necessary in order to respect initial schedules and budgets.

To help companies produce compliant and reliable products, Novika offers the following pre-certification services:

- interpretation of legal requirements
- design and optimization of products
- development and pre-qualification standardized testing
- assistance for certification approval
- assistance with the development of CE mark requirements
- resolution of intermittent EMC malfunctioning
- measurement of the function of transfer cables and connectors
- measurement of the attenuation of shielding, filters and components
- conception of dedicated test benches
- advisory services and technical assistance
- purchasing assistance

Testing Capability

Novika has the expertise and facilities necessary for carrying out a wide variety of electrical safety, electromagnetic emission and immunity tests. In particular, its recently updated installations allow Novika's qualified team to meet the latest edition of the main standards (ANSI/IEEE, CEI, CENELEC, CISPR, CSA, EN, FCC, IC).

EMC Emission Testing:

- (CISPR) for radiated disturbances from 150 kHz to 7 GHz
- (CISPR) for conducted disturbances from 150 kHz to 30 MHz
- (61000-3-2) for the current harmonics
- (61000-3-3) for voltage fluctuations and flickers
- For the measurement of magnetic fields
- For the measurement of electrostatic fields
- For the measurement of electromagnetic fields



EMC Immunity Testing:

- (61000-4-2) to electrostatic discharge (ESD)
 - (61000-4-3) to radiated, radio-frequency, electromagnetic fields from 80 MHz up to 6 GHz and from 1 up to 10 V/m
 - (61000-4-4) to electrical fast transient / burst (EFT)
 - (61000-4-5) to shock waves
 - (61000-4-6) to conducted disturbances, induced by radio-frequency fields from 10 MHz up to 80 MHz and from 1 up to 10 V
 - (61000-4-8) to power frequency magnetic field
 - (61000-4-9) to pulse magnetic field
 - (61000-4-11) to voltage dips, short interruptions and voltage variations
 - (61000-4-14) to voltage fluctuation
 - (61000-4-17) to ripple on d.c. input power port
 - (61000-4-28) to power frequency variations
 - (61000-4-29) to voltage dips, short interruptions and voltage variations on d.c. input power port
- This list is non-exhaustive and new tests are continuously added.

Safety Testing :

- Of dielectric strength
- Of insulation resistance
- For measurement of leakage current
- For ground continuity
- For ground bond



The laboratory

Novika's electromagnetic semi-anechoic room consists of a Faraday cage whose walls are covered with ferrite tiles and absorbing materials. This controlled environment meets the applicable CEM international certification requirements. It allows measurement at a 3 m distance of radiated disturbances up to 7 GHz and enables testing of any equipment whose operation is related to electromagnetic waves. The main features of the laboratory are:



- inner dimensions of 7.3 m x 4.0 m x 4.0 m (24.0' x 13.1' x 13.1')
- controllable antenna of 1 to 4 m height (3.3 à 13.1')
- controllable turntable of 2 m (6.6') in diameter with a weight capacity of 1000 kg (2 205 lb)
- quiet zone of 1.8 m (5.9') diameter
- CCTV system