

Noise labeling: an overview of the Brazilian experience

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Content

- **Brief History**
- **Description of the program**
- **Some results**
- **Comments and proposals for further work**

Brief History-1990

Motivation

- ◆ In 1990 the National Environment Council has established two government resolutions to deal with noise pollution in

Brazil:

- Resolution 001/1990, a Brazilian technical standard to directly address the measurement and assessment of noise in inhabited areas;
- Resolution 002/1990 created the Silence Program with the aim to:
 - Encourage the production and use of machines, engines, equipment and devices that emit low noise levels when its use in industry, in general vehicles, construction, household appliances, etc.

Motivation

- ◆ Why to start by household appliances?
 - ✓ Household appliances are noisy devices widely used by the population;
 - ✓ Comparison between different noise sources (refrigerators, blenders, air conditioners);
 - ✓ To provide an additional information to consumers at the time of purchase, which could contribute for the choice of low noise appliances.

■ Main strategy

✓ To implement a **voluntary** program
involving:

- Manufacturers
- Consumers
- Acoustic Laboratories
- Product Certification Bodies



Brief History-1994

■ Problem

- ✓ Manufacturers of household appliances saw as a

punishment for their industries

■ Practical solution

- ✓ In 1994 the **National Environment Council** established a new Resolution making **Compulsory** the use of a Noise Label on all household appliances marked in Brazil.

■ Resolution 020-1994 - National Environment Council

- ✓ Established the **mandatory** use of the Noise Label as indicating the sound power level in dB (A), for all household appliances , made in Brazil or imported;
- ✓ The acoustic tests must be performed by Inmetro or accredited laboratories which are part of the Brazilian Network of Testing Laboratories-RBLE and/or the International Laboratory Accreditation Cooperation – ILAC, among others;
- ✓ If not available Brazilian technical standards for the acoustics testing, ISO 4871-Declaration and verification of noise values of machinery and equipment and its references shall be used.

■ Creation of the Technical Sub-committee “Noise Labeling”:

◆ Objectives

- ✓ To develop a Specific Regulations for Conformity Assessment;
- ✓ To establish a schedule for Noise Labeling;
- ✓ To coordinate the development of Brazilian technical standards.

Technical Sub-committee Composition

- ✓ General Coordination
 - National Institute of Metrology, Quality and Technology-Inmetro
- ✓ Secretariat
 - Product Certification Bodies –OCP/OVD
- ✓ Participants
 - Brazilian Institute of Environment and Natural Resources -Ibama
 - Acoustics and Vibration Division-Inmetro
 - Brazilian Association of Electrical and Electronic Industry-Abinee
 - Brazilian Association of Technical Standards-ABNT
 - Accredited laboratories
 - Institute of Consumer Protection-IDEC
 - Brazilian Acoustical Society-SOBAC

■ The National Institute of Metrology, Quality and Technology started the tests by blenders

- ✓ Because the absence, at that time, of accredited laboratories;
- ✓ Blender was chosen as the first appliance to be tested
 - Because it is a type of appliance widely used by the population;
 - Because it is one of the noisiest among small household appliances;
 - Because its test is very easy to be carried out
 - Maximum speed and 1 / 3 of the total volume of the cup with water at 23 ° Celsius.

■ Noise Label

Type of Household

Manufacturer name

Brand

Model /Power supply voltage

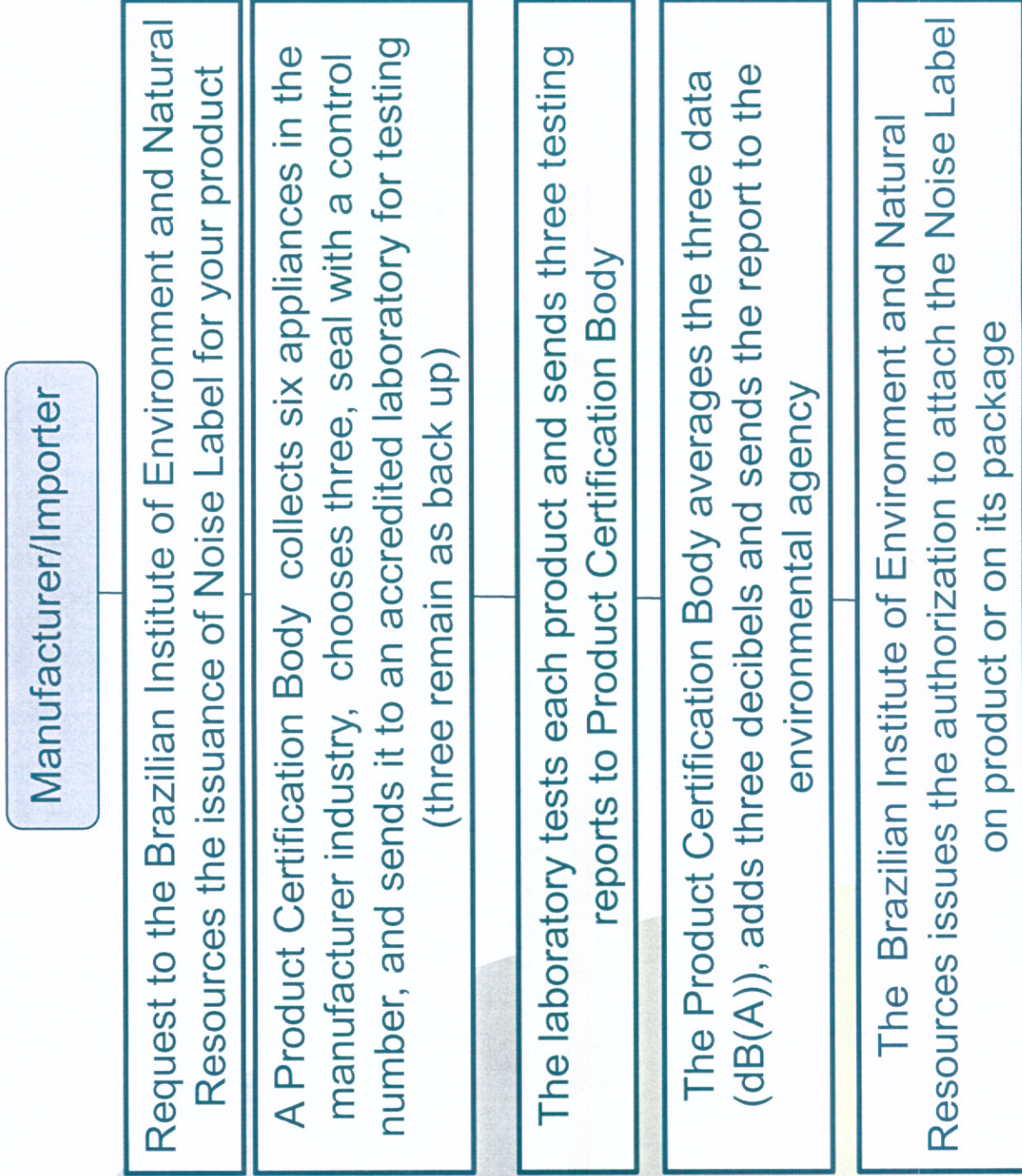
Technical Standard

Sound Power Level-dB(A)

License number for noise label
(traceability)



The Flowchart to obtain the Noise Label





First Measurements

Inmetro - 1998 to 2001

	Year				Total
	1998	1999	2000	2001	
Blenders	23	29	82	86	220
Hair Dryers			42	78	120
Total	23	29	124	164	340

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Noise Labeling Program: Current Status

- ✓ More than 1500 testings from 2003 to 2010 in accredited laboratories;
- ✓ The Noise Labeling Program shall be absorbed by the Brazilian Labeling Program – PBE
 - A broader program which applies to energy efficiency and cars.

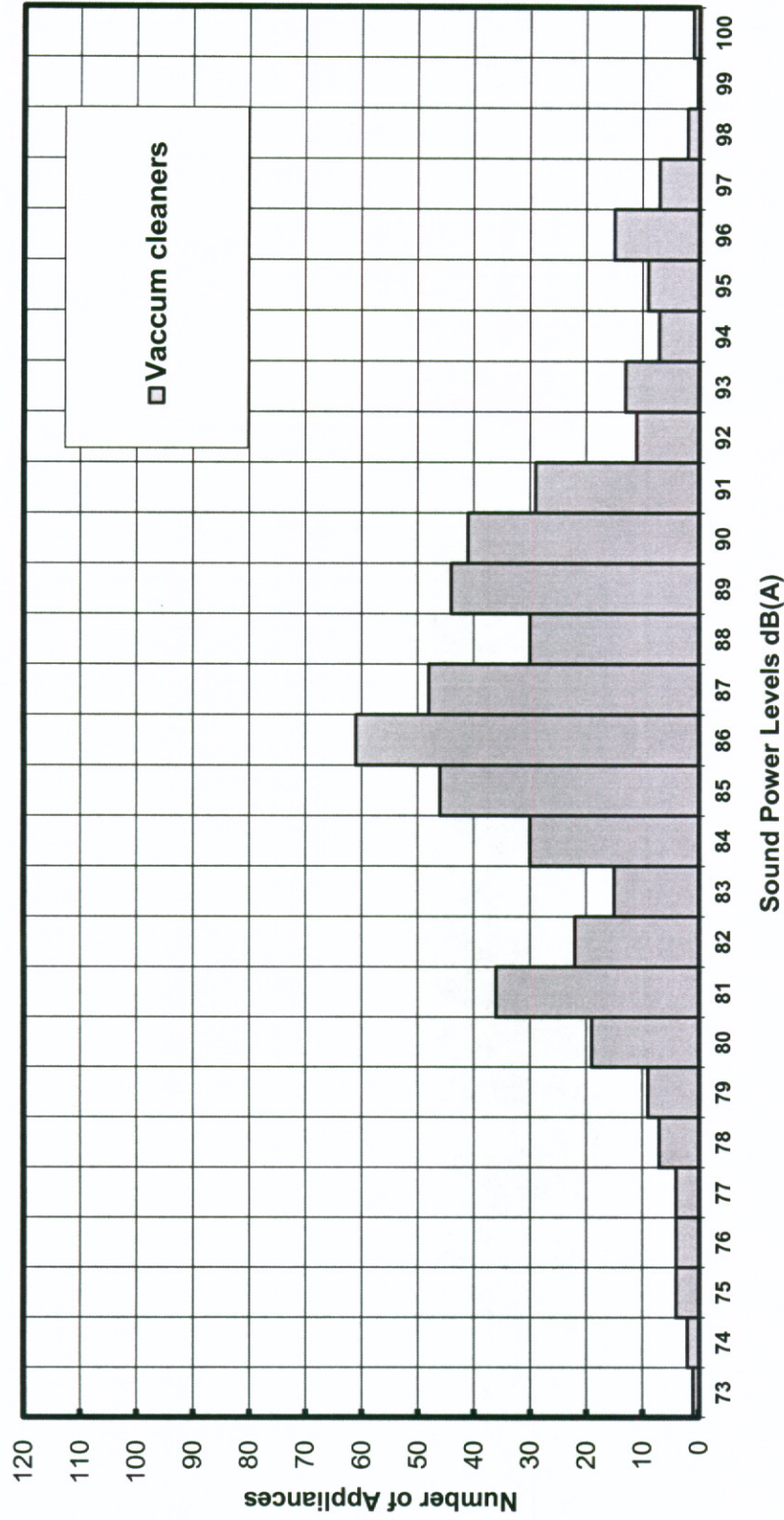
Noise Labeling Program: Current Problems

- ◆ Small number of different kinds of household appliances;
- ◆ Need of a standard verification for the labeled values;
- ◆ Consumers do not have a parameter to compare the decibels values;
 - ✓ Noise level classification
- ◆ Absence of a comprehensive and ongoing educational program
 - Television, comic, basic education.

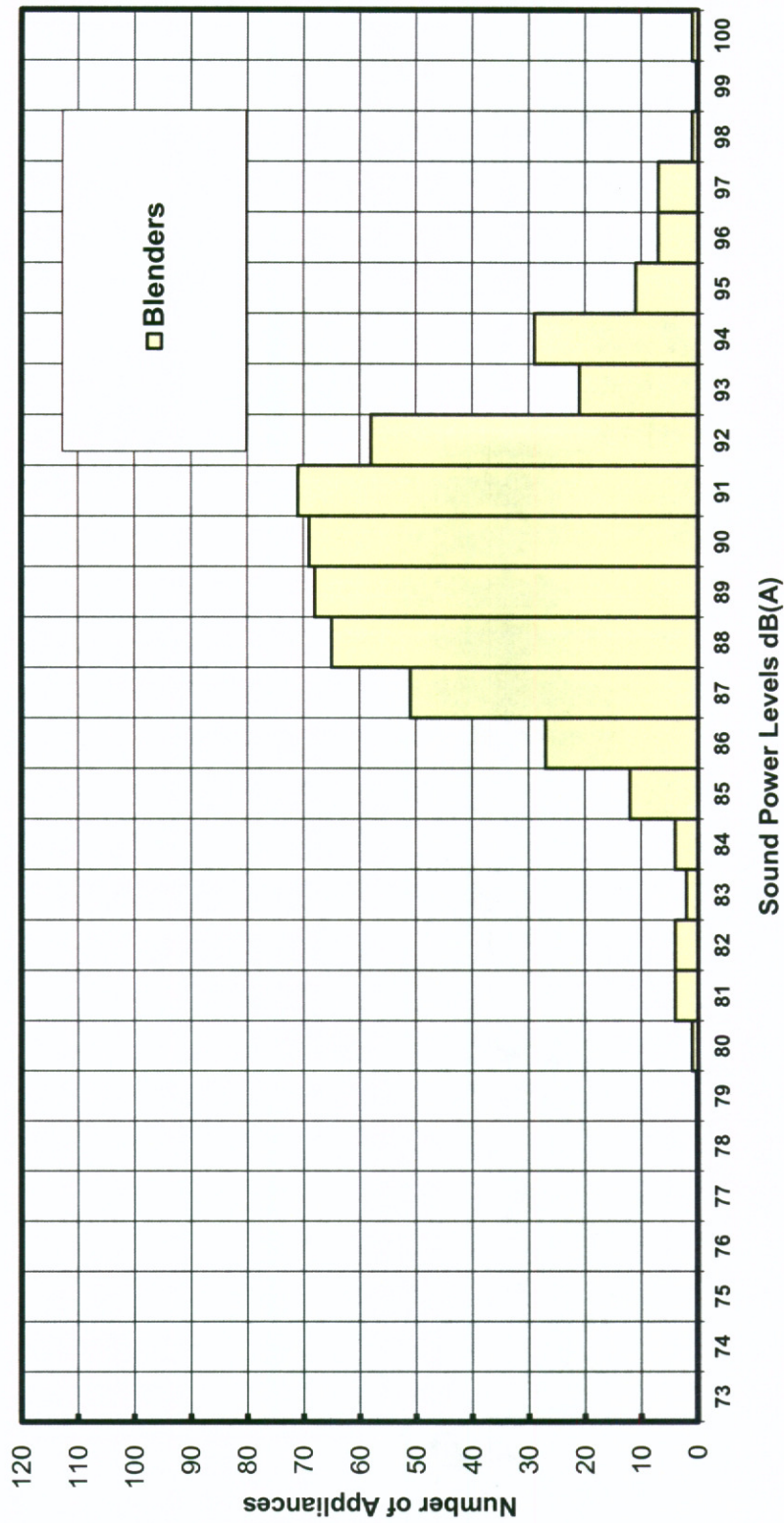
Noise level classification

- ◆ Enable consumers to compare products by price, performance and noise levels;
- ◆ A classification could be divided by:
 - ✓ Smaller and larger appliances
 - Hair dryers, blenders, vacuum cleaners, mixers, electric shavers, etc, and washing machines, dishwashers, refrigerators...
 - ✓ Type of appliance

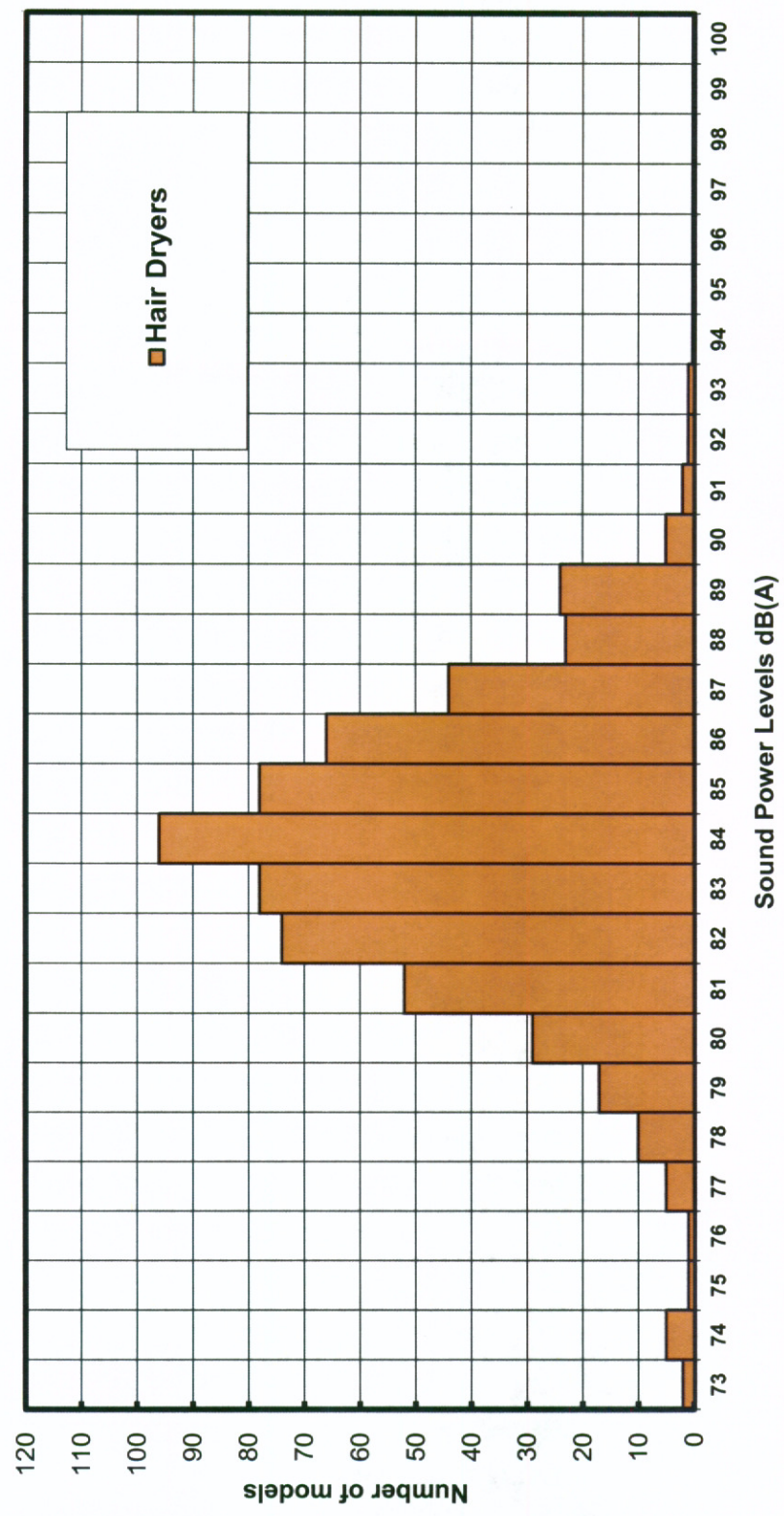
Noise level classification – Vacuum cleaners



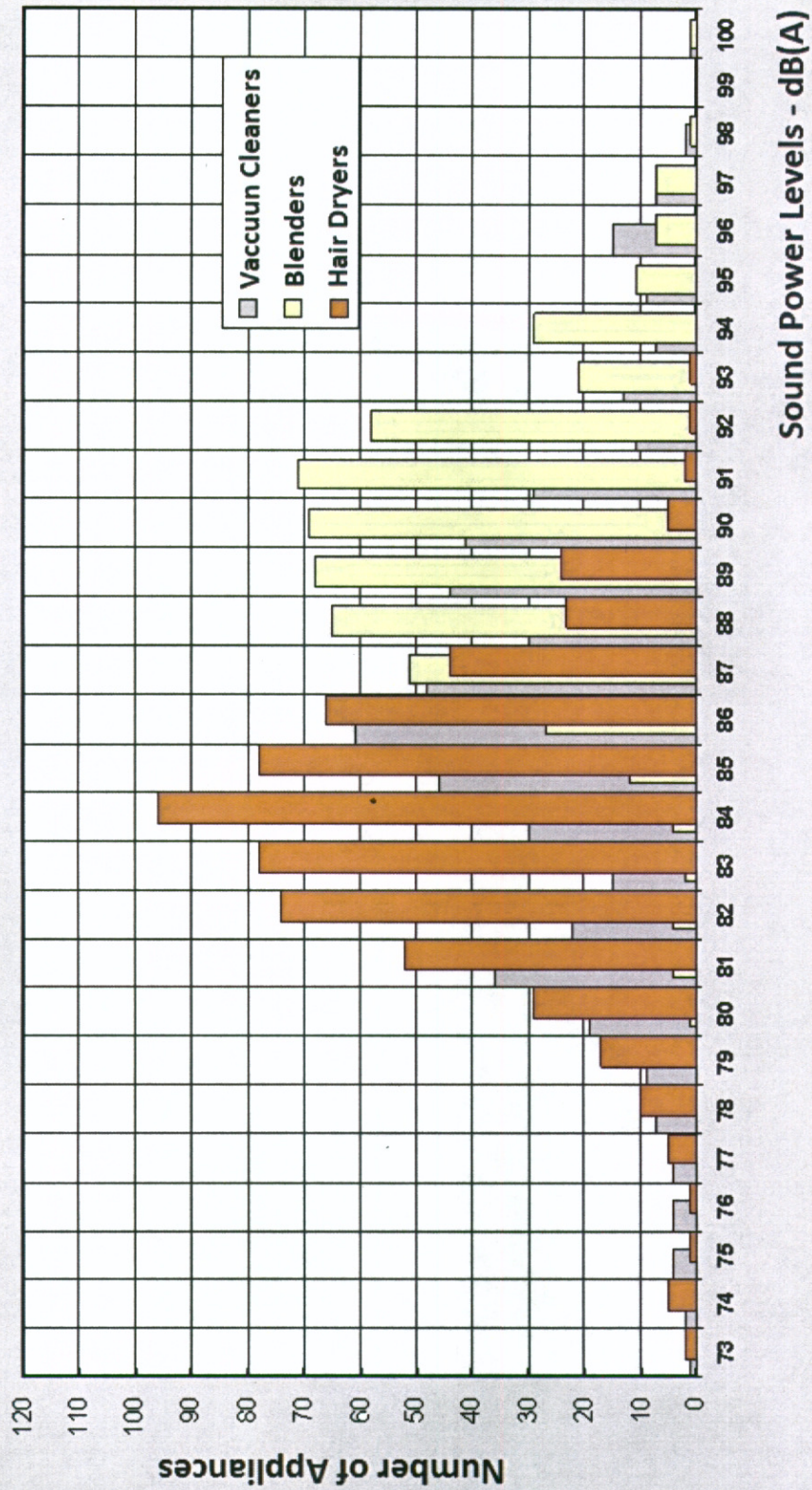
Noise level classification – Blenders



Noise level classification – Hairdryers



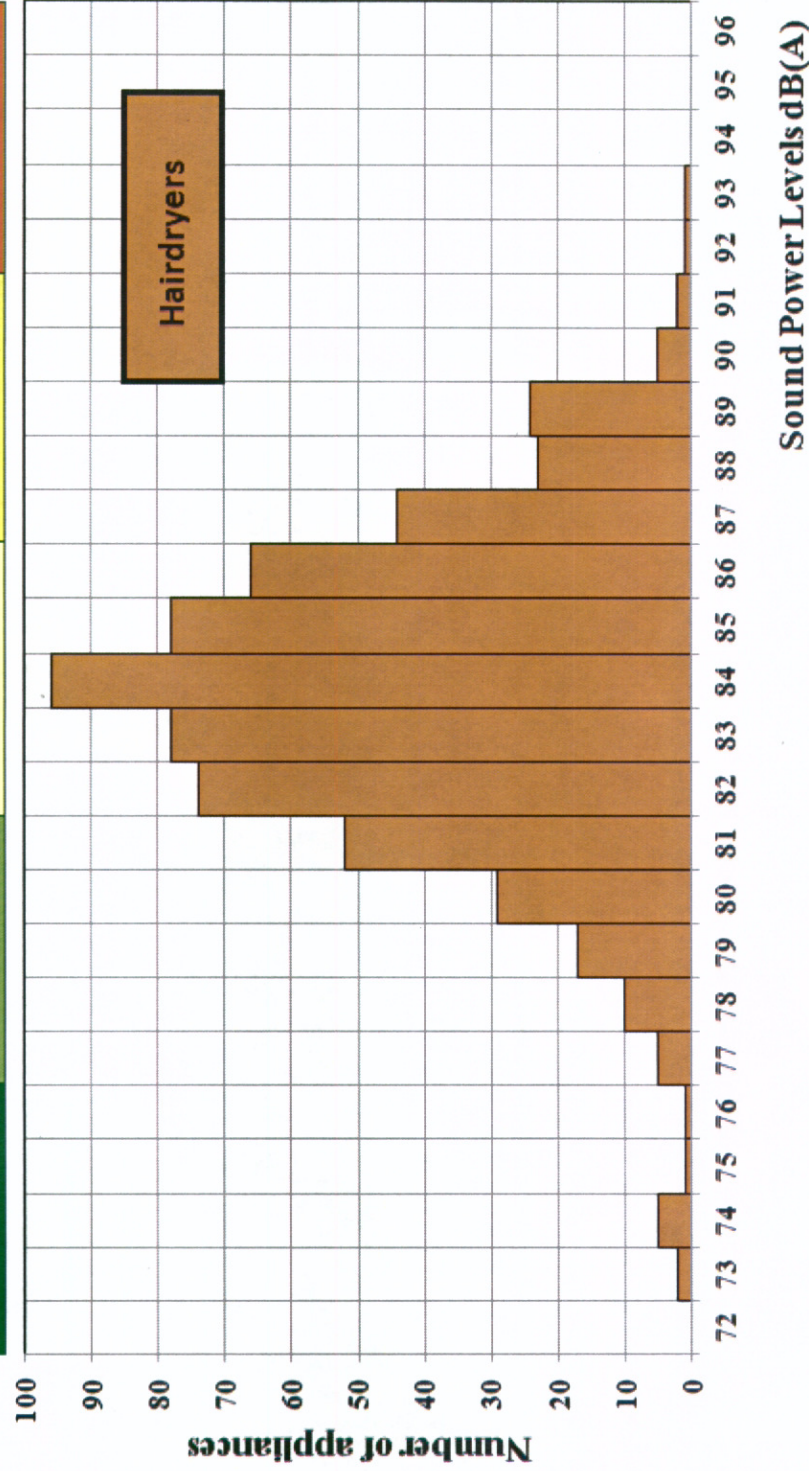
Noise level classification – All appliances



Classification according to the noise level

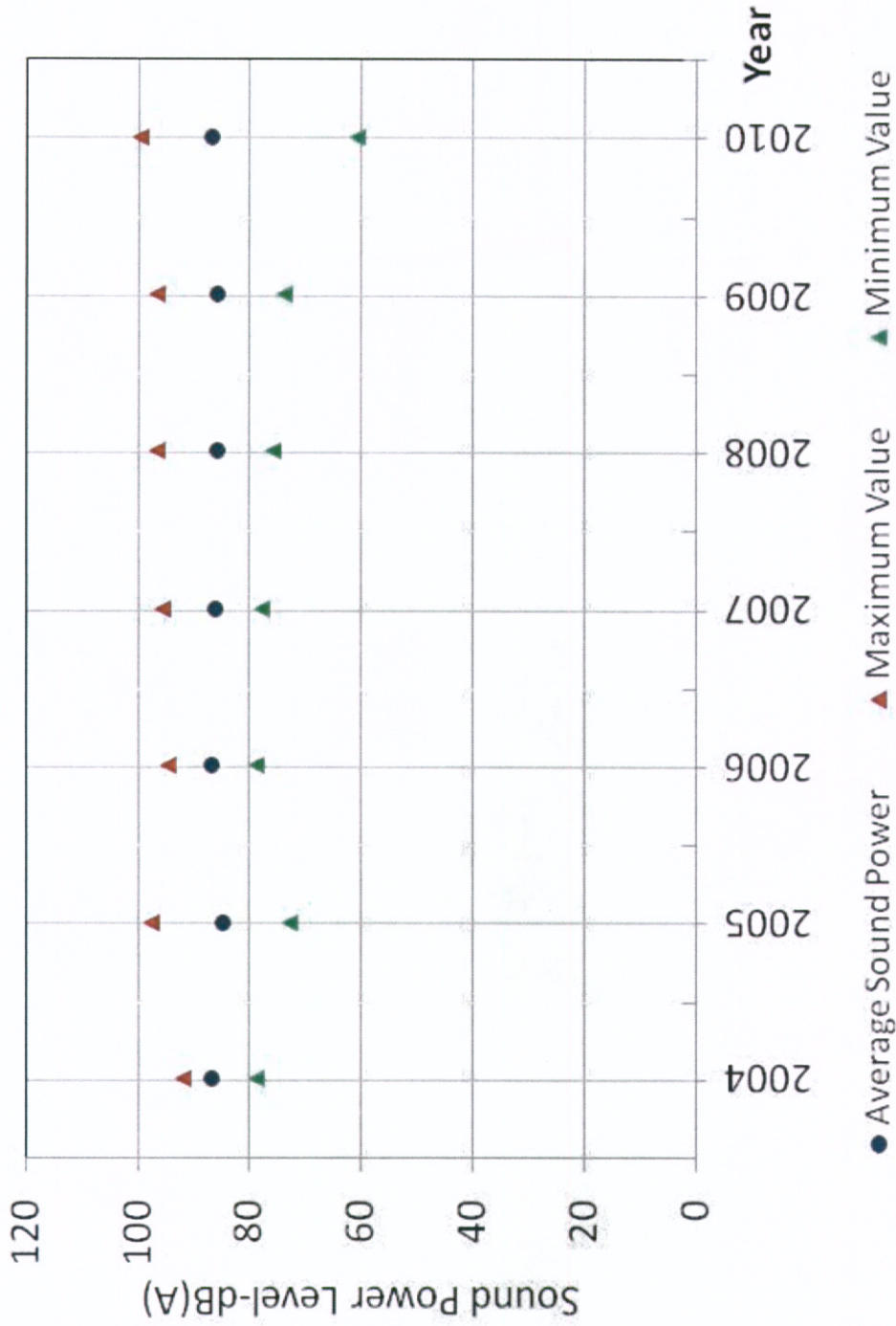
Rating ranges for hairdryers – Five 5dB(A) bands

A	B	C	D	E
72 to 78 dB(A)	77 to 81 dB(A)	82 to 86 dB(A)	87 to 91 dB(A)	92 to 96 dB(A)



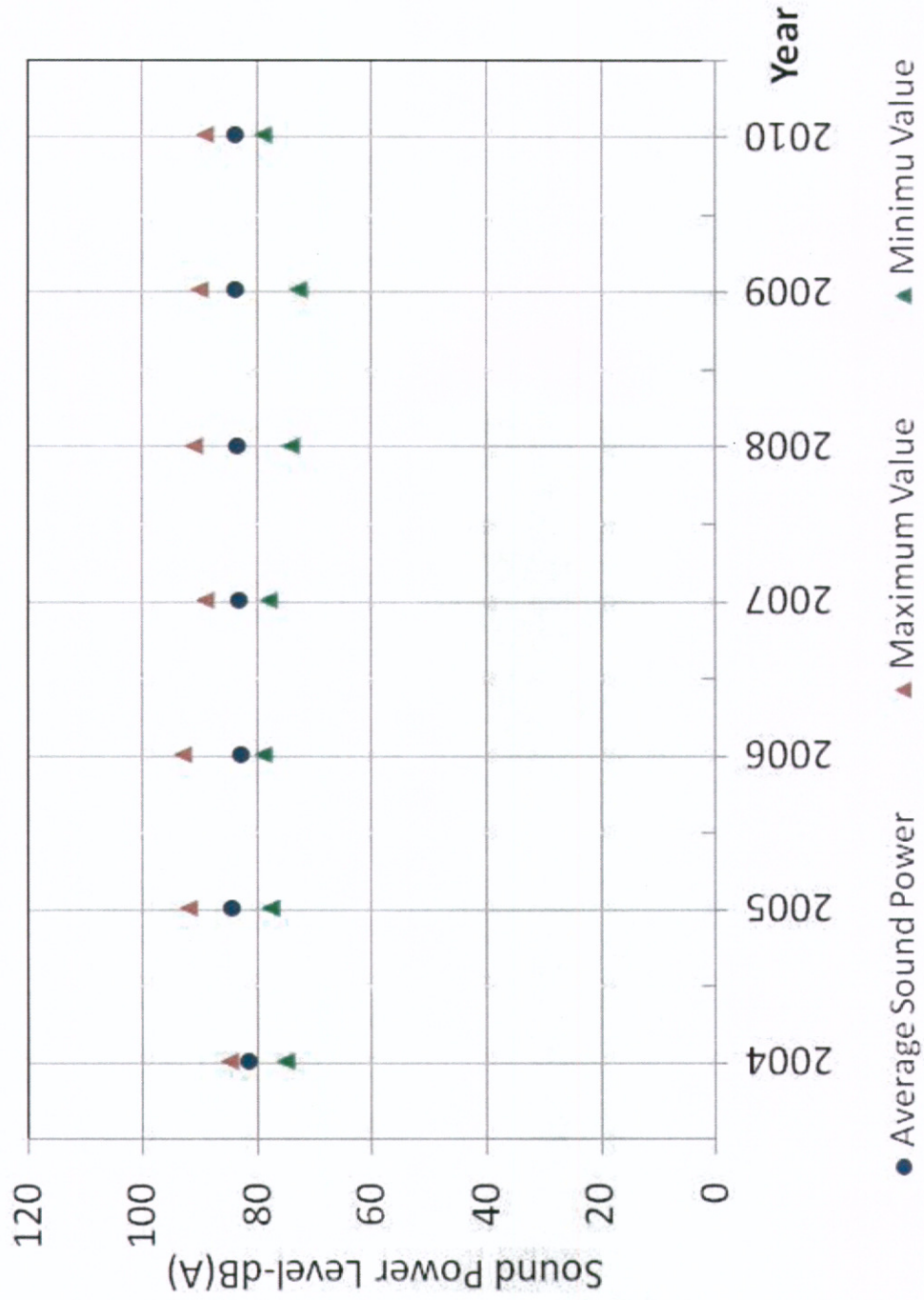
Sound Level Evolution

Vacuum Cleaners



Sound Level Evolution

Hairdryers



Typical Examples

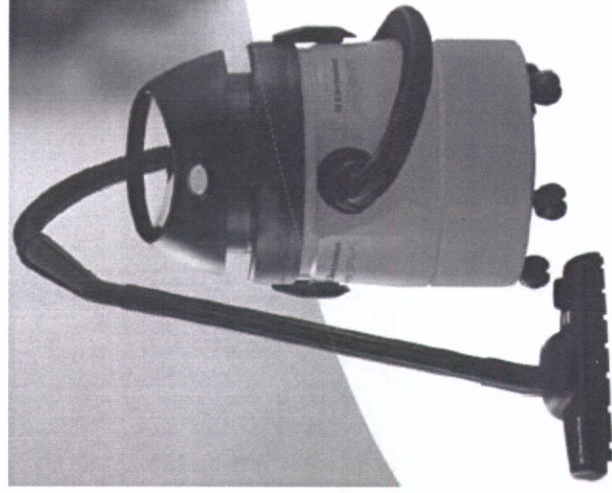
Electrolux (Hungary)



73 dB(A)

US\$ 470,00

Electrolux (Brazil)

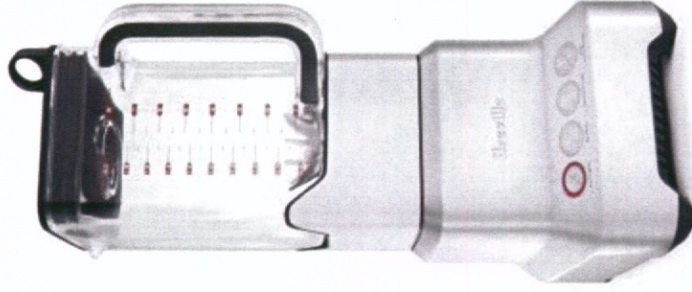


98 dB(A)

US\$ 235,00

Typical Examples

Breville



80 dB(A)
US\$ 400,00

Oster



100 dB(A)
US\$ 200,00

General Comments

■ From 2003 to 2010

- ◆ 518 vacuum cleaners
 - 26% Made in Brazil
 - 70% Made in China
 - 4% (other countries as Korea, Hungary)

- ◆ 615 hairdryers
 - 20% Made in Brazil
 - 80% Made in China

- ◆ 513 blenders
 - 58% Made in Brazil
 - 32% Made in China
 - 10% (other countries as Venezuela, USA, Australia, Mexico)

General Comments

- **More than 1.500 tests during last 7 years**

- ◆ Each test:

- ✓ US\$ 500,00 for the laboratory

- ✓ US\$ 1.500,00 to for Product Certification Bodies

In 7 years more than **US\$ 3.000.000,00**

Future Work

- ◆ Increase the number of accredited laboratories;
- ◆ Develop a monitoring program;
- ◆ Coordinate a media campaign to promote the Noise Label;
- ◆ Develop test methods to other devices (washing machines, refrigerators, air conditioners);
- ◆ To conduct a new inter laboratory comparison on sound power measurements in Brazil;
- ◆ To expand the program for testing industrial machines
 - ✓ (Electric drill, sander and chainsaw).

Thank you!