

**REFLEXIONS MENEES PAR  
LE COMITE TECHNIQUE D' INCE/USA  
SUR L'AFFICHAGE DU BRUIT DES  
PRODUITS**

Rapport par :  
**Matthew A. Nobile**

# Product Noise Ratings for the General Public

**Matthew A. Nobile**

IBM Hudson Valley Acoustics Laboratory  
Poughkeepsie, New York, USA



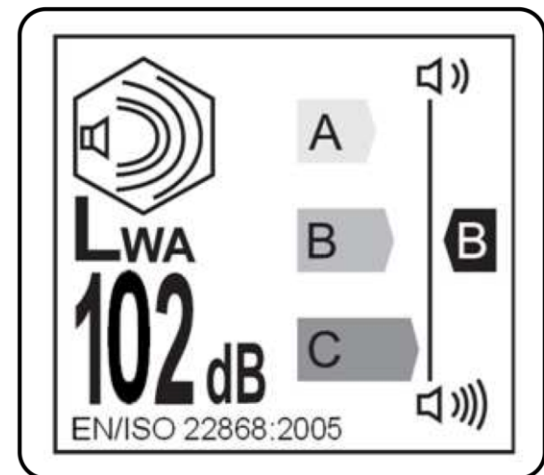
# **Updates to PNR Proposal Since Inter-Noise 2009 CAETS presentation**

**Matt Nobile,  
IBM Hudson Valley Acoustics Laboratory  
Poughkeepsie, New York**

**2010 October 04**

# Noise Labelling

An integrated approach to noise reduction



EGMF

European Garden Machinery industry Federation

# **First      Proposal**

# Proposal: Noise Rating Tag

Why not model a new noise rating "tag" after the EU Energy Label?

<h2>Noise</h2> <p>Manufacturer: <b>Servers-R-Us, Inc.</b> Model: <b>Model SER-795</b></p>		<b>Type of Product:</b> ITI Class A1-2. Server System for data centers in large enterprises	
<p><b>Lower Noise</b></p> <p><b>Higher Noise</b></p>		<p><b>B</b></p> <p><b>74 dB</b></p>	
<b>Declared Noise Levels</b> Declared A-Weighted Sound Power Level: <small>in decibels, re 1 µPa</small> Mean A-Weighted Sound Pressure Level: <small>(at the bystander positions) in decibels, re 1 µPa</small>		<u>Operating</u> <b>74 dB</b>	<u>Idling</u> <b>74 dB</b>
<b>Product Description</b> Typical configuration: Two processor books and three I/O cages. Nominal operating conditions and front and rear doors closed			
<b>Information on Range-of-Levels</b> The range of values given above for the A-G scale are from: <input type="checkbox"/> Actual products on the market <input checked="" type="checkbox"/> Assigned range for product type <input type="checkbox"/> Other (explain):			
<b>Applicable Standards and Further Information</b> All measurements made in accordance with ISO 7779 and declared in accordance with ISO 9296. For more information see: <a href="http://www.itic.org">www.itic.org</a>			

# Problems with Proposal

Regulatory and marketing problems with using a label that looks like the EU Energy Label

- Communication from EC's DG for Energy and Transport
- **Prohibited** by Energy Labelling Directive 92/75/EEC - Article 7(b)

# Second Proposal



# What do engineers want to know?

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- Sound power level
- Sound pressure level
- 1/3-octave band levels
- Loudness in sones
- Discrete tone ratings
- Sound Quality metrics
  - Sharpness, fluctuation strength, tonality, roughness, etc.
- Plots, curves, charts, and more

# What do consumers want to know?

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1. How loud *is* this product?
2. How loud is this product compared to similar products?
3. Can this product damage my hearing?

# Let's Try to Please Both Groups

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**Problem:** Nearly impossible to devise a product noise declaration with enough detail for **engineers and practitioners** yet simple enough for **the general public** to understand.

**Solution:** Have *two types of product noise declarations*

# Two Types of Product Noise Declarations

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## 1. "Product Noise Declarations":

- Everything we've been talking about up to now...
- Trade associations and industry groups continue with their efforts and approaches (e.g., the IT Industry's declarations and ISO 9296)
- Publish these on company websites and other places
- Include whatever information and quantities they like
- Standardize the formats and types of information

## 2. "Product Noise Ratings":

- This is new news...
- These will be targeted to consumers and the general public
- These will be simple and understandable (but also accurate!)
- *These will be addressed in the rest of this presentation*

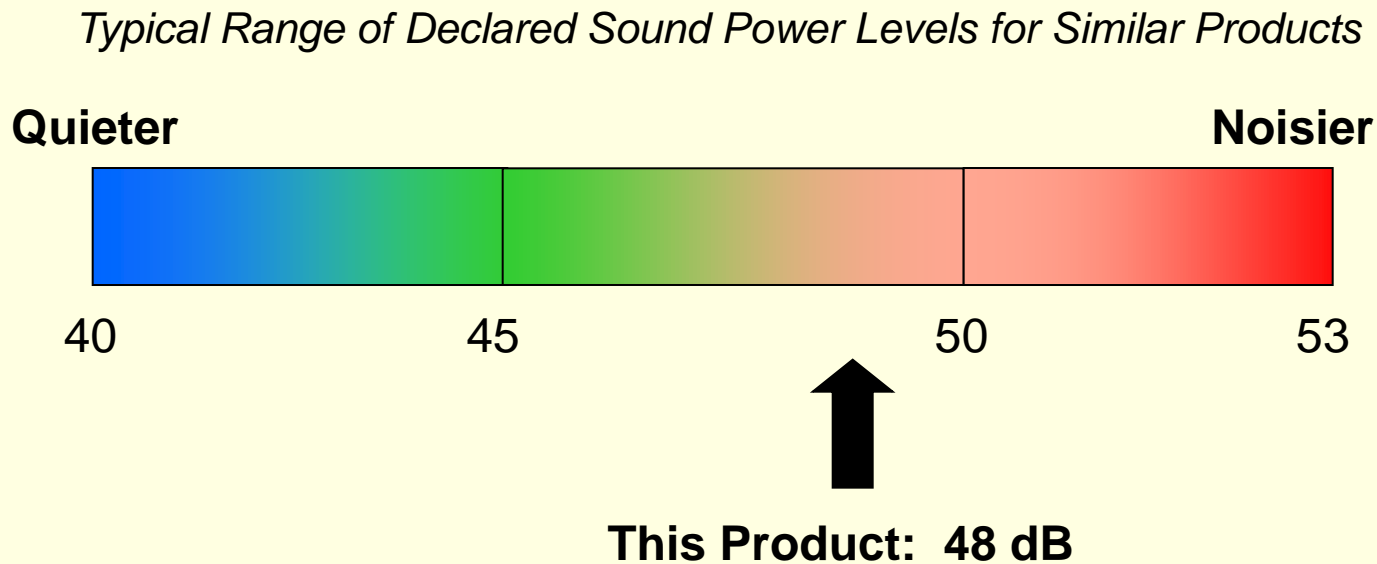
# Product Noise Rating (PNR) Scale

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## First question...

How loud ***is*** this product?

## Include Information on “Range of Levels”



## The Product Noise Rating (PNR) Scale

PNR	Subjective Impression at Typical Distance from Product	Typical Products
0	Inaudible	
5		
10		
15	Extremely quiet	Ticking Watch
20		
25	Very Quiet	Small electric clock
30		
35	Quiet	Laptop Computer
40		
45	Quiet to Moderate	Desktop Computer
50		
55	Moderate	Dishwasher
60		Refrigerator
65	Moderate to Loud	
70		Hair Dryer
75	Loud	
80		Vacuum Cleaner
85	Very Loud	Kitchen Blender
90		Circular Saw
95		
100	Extremely Loud	Jackhammer
105		Pneumatic riveter
110		
115		
120	Painful	

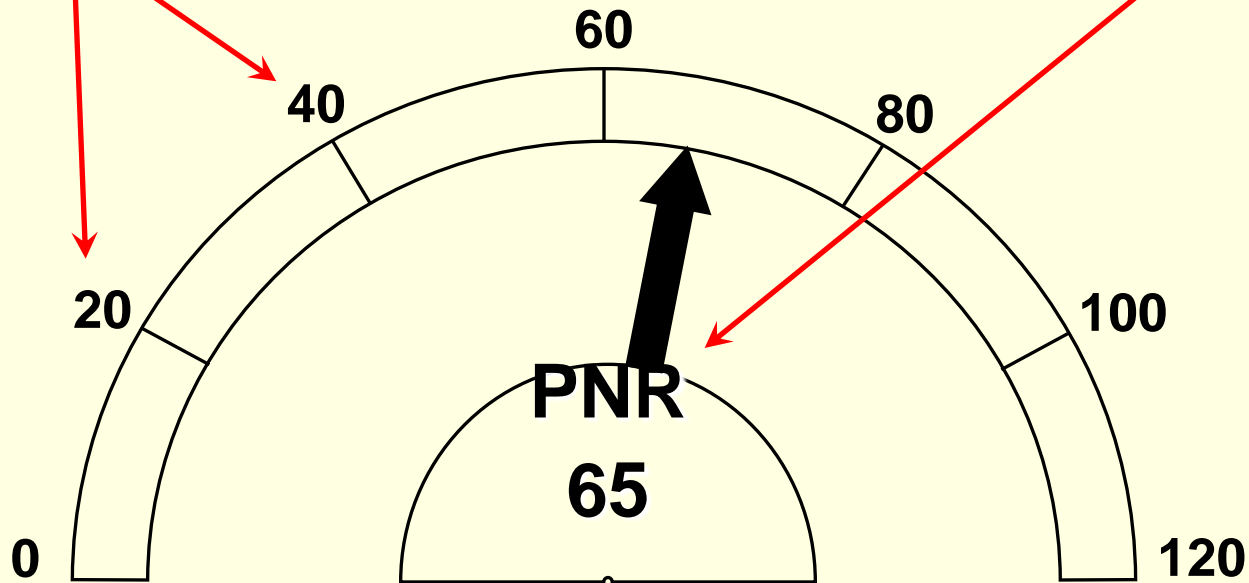
Immission terms are at typical distance (*note: may delete this whole column*)

We will obtain general consensus on the words and products that fill out this table

Scale that shows entire range of PNR (from silent to painful)

## "Noise-ometer" (like "speedometer")

Main space for PNR of the product being rated, along with big arrow



The Product Noise Rating (PNR) stated above corresponds to:  
the A-weighted sound power level,  
measured according to ISO 3744

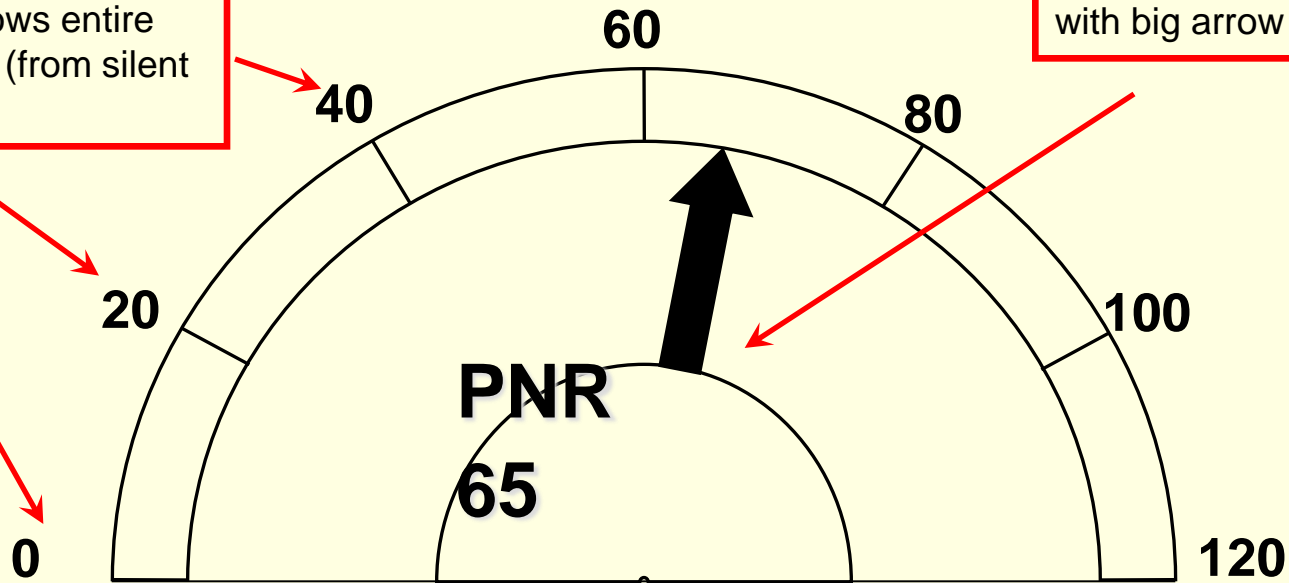
Mandatory box to  
state the objective  
metric that is behind  
the stated PNR (for  
those who care)



# "Noise-ometer"

Scale that shows entire range of PNR (from silent to painful)

Main space for PNR of the product being rated, along with big arrow



More information on Product Noise Ratings and what the PNR value means can be found at <http://www.xxx.yyy/noise/PNR.html>

Optional box for additional info, web links, other metrics, etc.

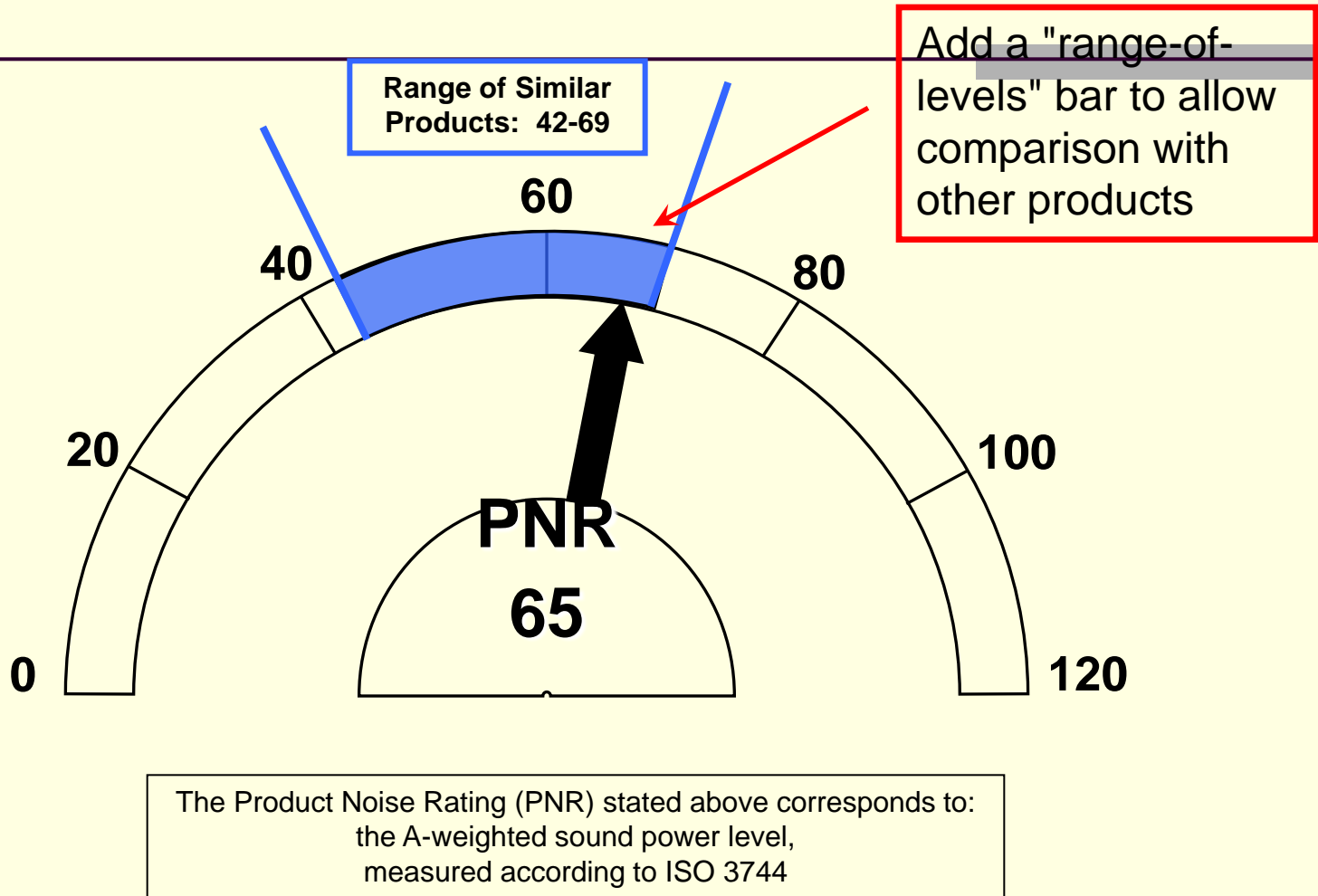
# Product Noise Rating (PNR) Scale

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## Second question...

How loud is this product compared to similar products?

# "Noise-ometer"



*Information on what the Product Noise Rating (PNR) means can be found at <http://www.xxx.yyy/noise/PNR.html>*

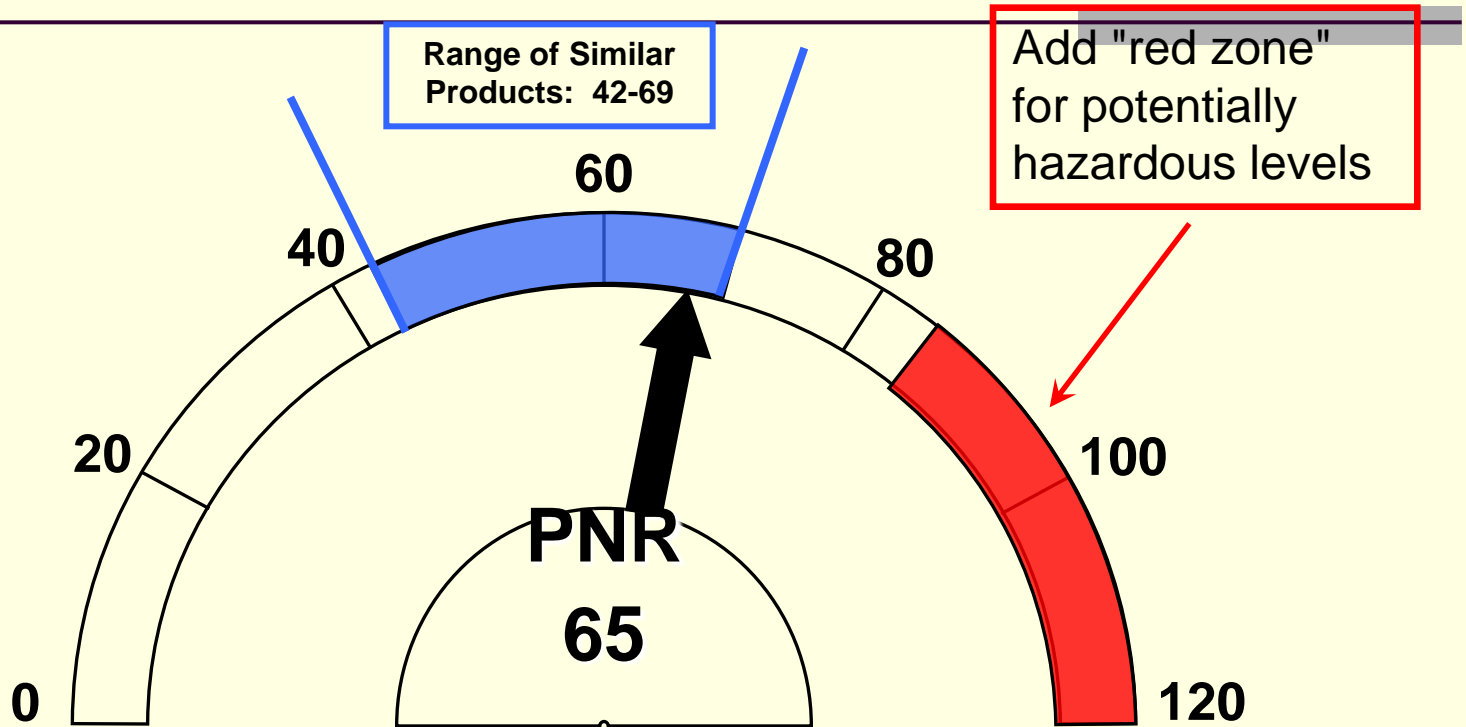
# Product Noise Rating (PNR) Scale

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## Third question...

Can this product damage my hearing?

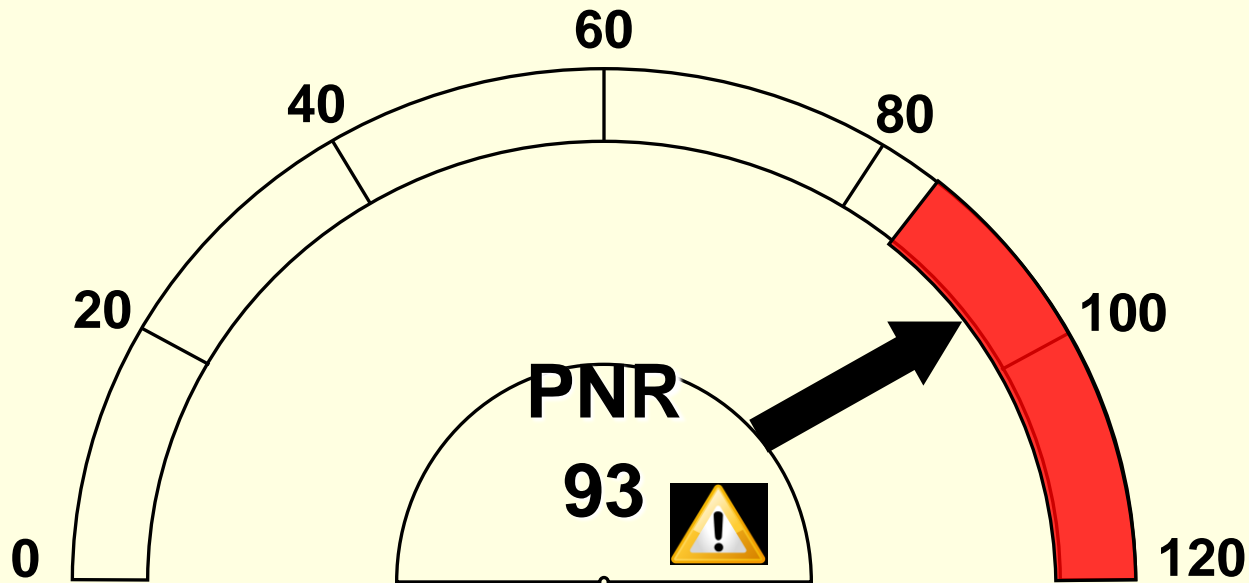
# "Noise-ometer"



The Product Noise Rating (PNR) stated above corresponds to:  
the A-weighted sound power level,  
measured according to ISO 3744

*Information on what the Product Noise Rating (PNR) means can be found at <http://www.xxx.yyy/noise/PNR.html>*

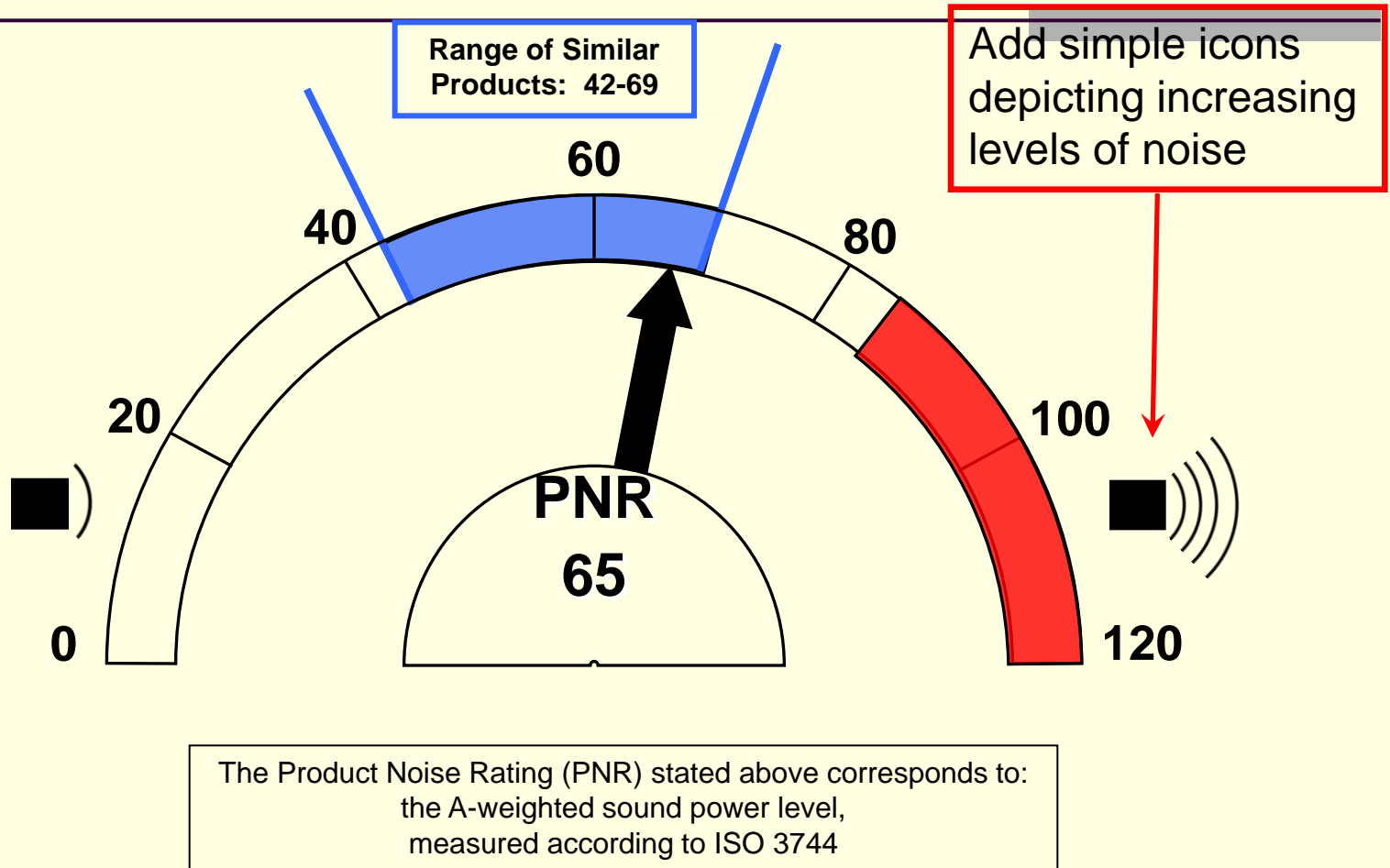
Perhaps if the PNR is in the red zone, there will be a requirement (by regulation) to include an actual physical label, and/or warning, on the product itself.



The Product Noise Rating (PNR) stated above corresponds to:  
the A-weighted sound pressure level at operator's position,  
measured according to ISO 11201

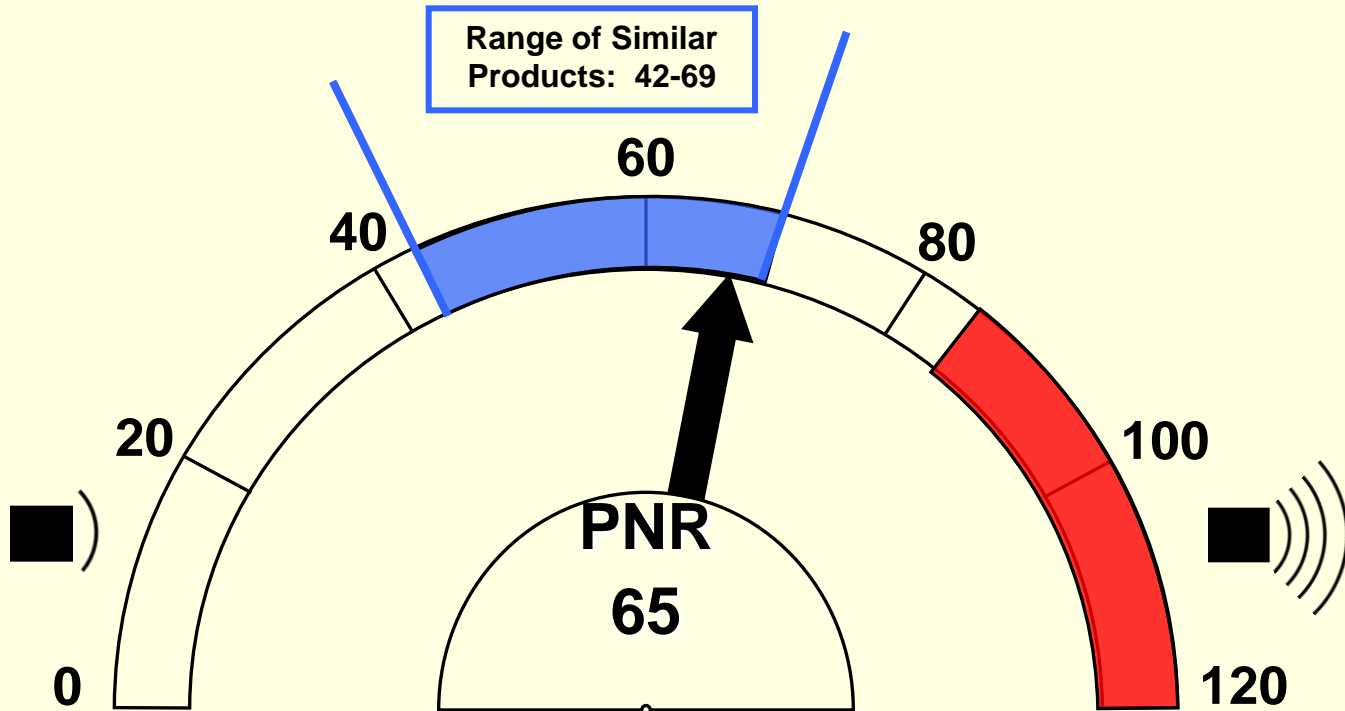
**Information on what the Product Noise Rating (PNR) means can be found at**  
**<http://www.xxx.yyy/noise/PNR.html>**

# "Noise-ometer"



*Information on what the Product Noise Rating (PNR) means can be found at <http://www.xxx.yyy/noise/PNR.html>*

# "Noise-ometer"



The Product Noise Rating (PNR) stated above corresponds to:  
the A-weighted sound pressure level at operator's position,  
measured according to ISO 11201.  
The *Loudness* for this product is 4.2 sones, measured  
according to HVI Publication 615.

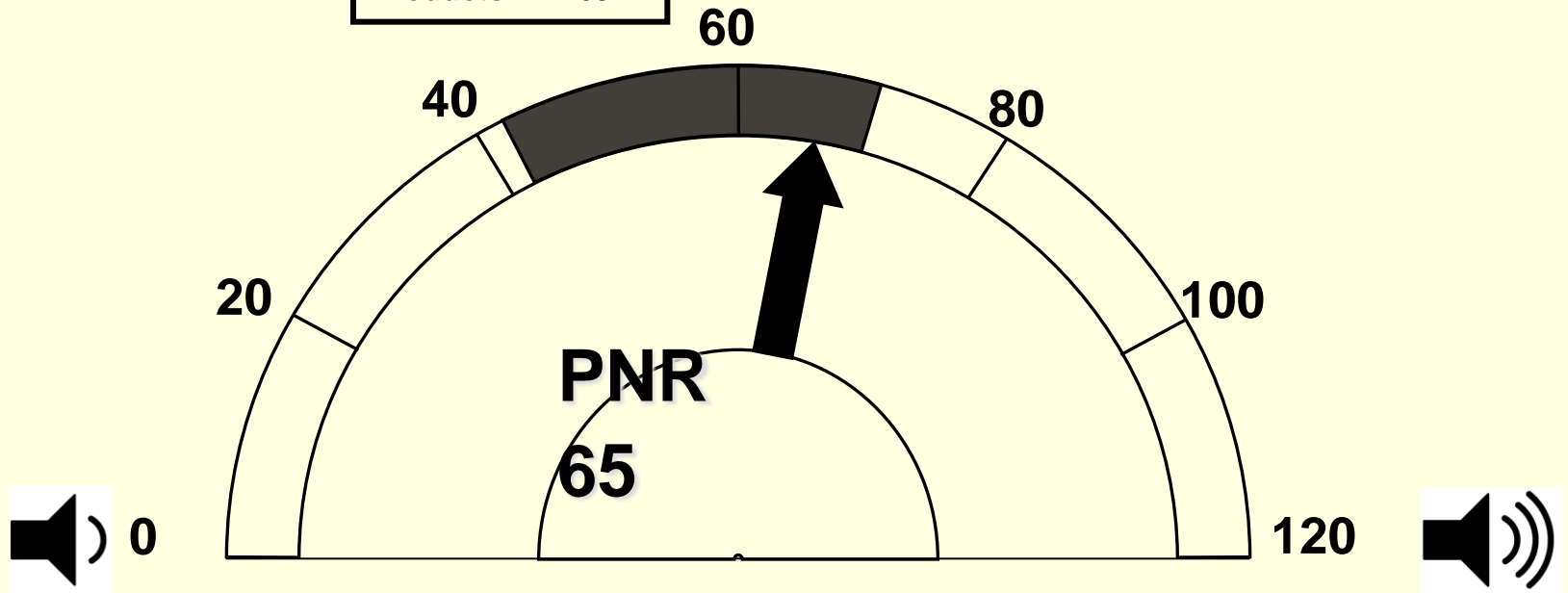
Note: Provision for  
including some  
other metric and  
test standard



# "Noise-ometer"

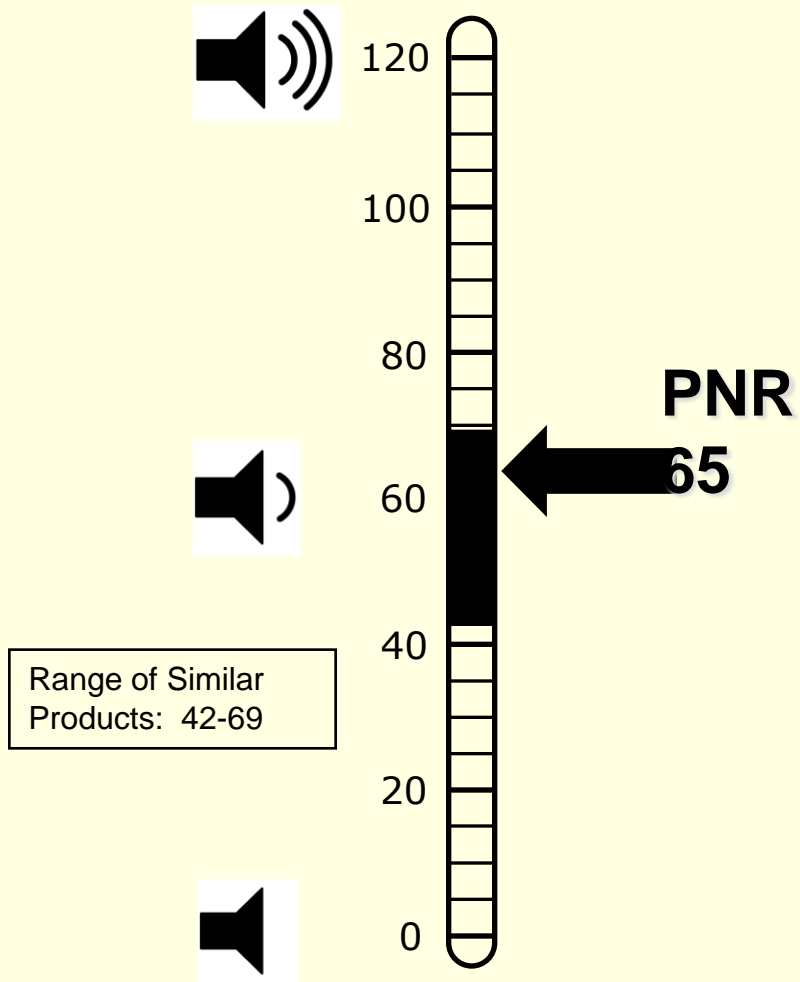
Range of Similar  
Products: 42-69

Black and White  
Version needed

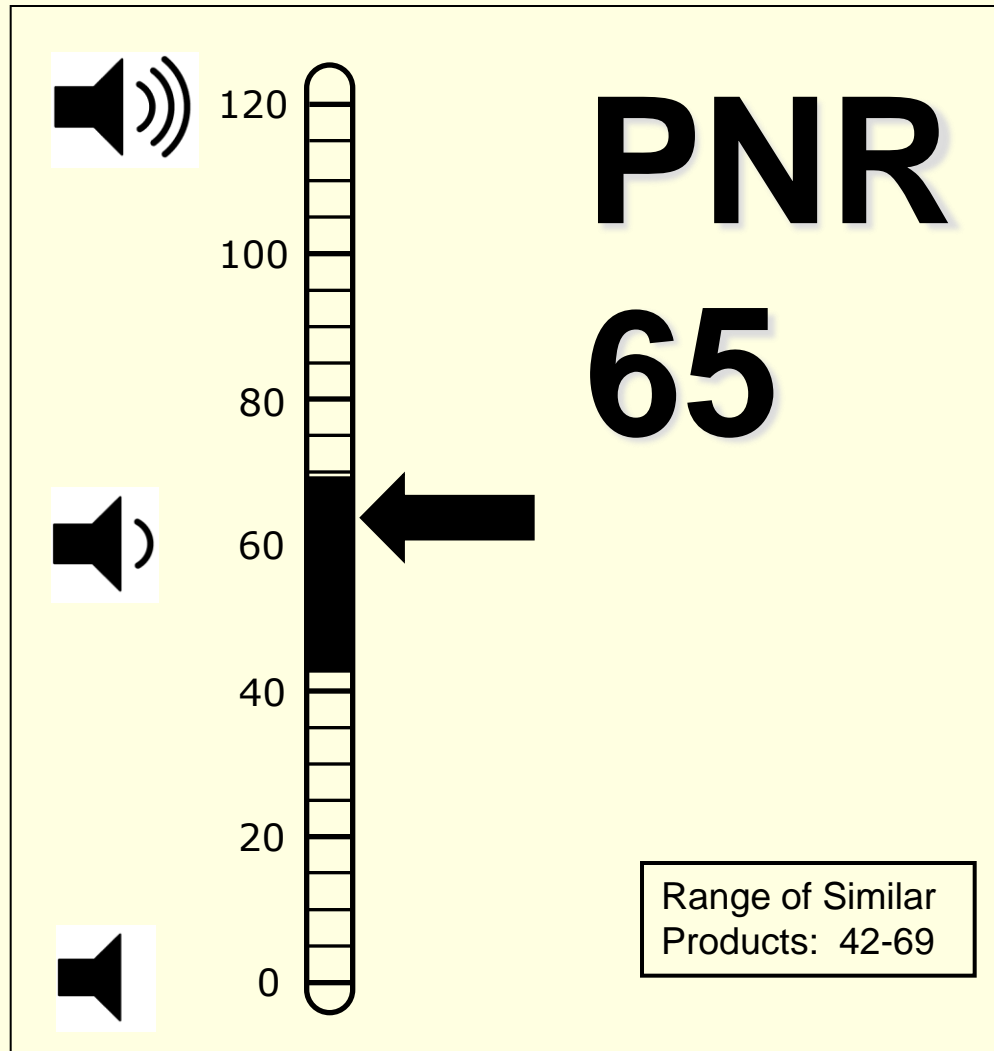


The Loudness for this product is 4.2 sones, measured according to HVI Publication 615. Information on what the Product Noise Rating (PNR) means can be found at <http://www.xxx.yyy/noise/PNR.html>

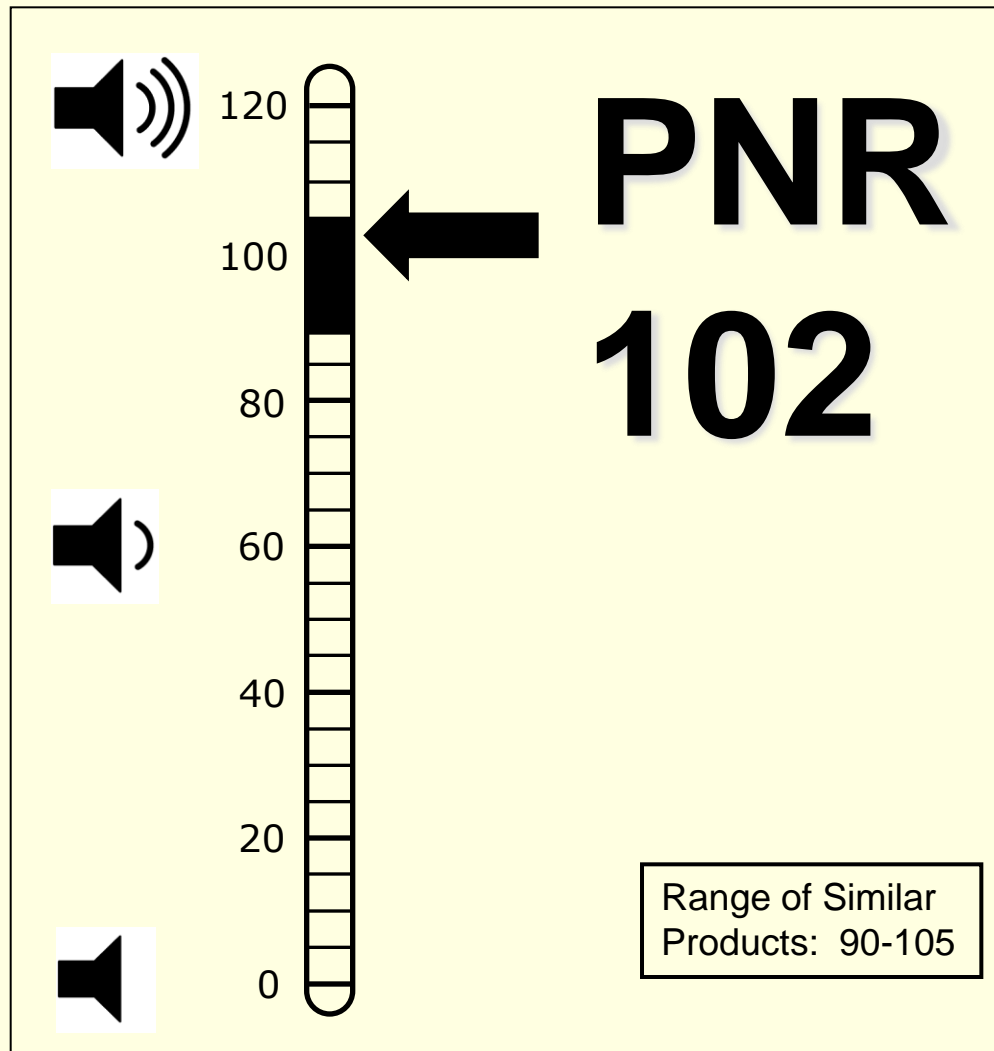
## “Thermometer” Type Icon



## Alternate "Label" Type Display



## Alternate "Label" Type Display



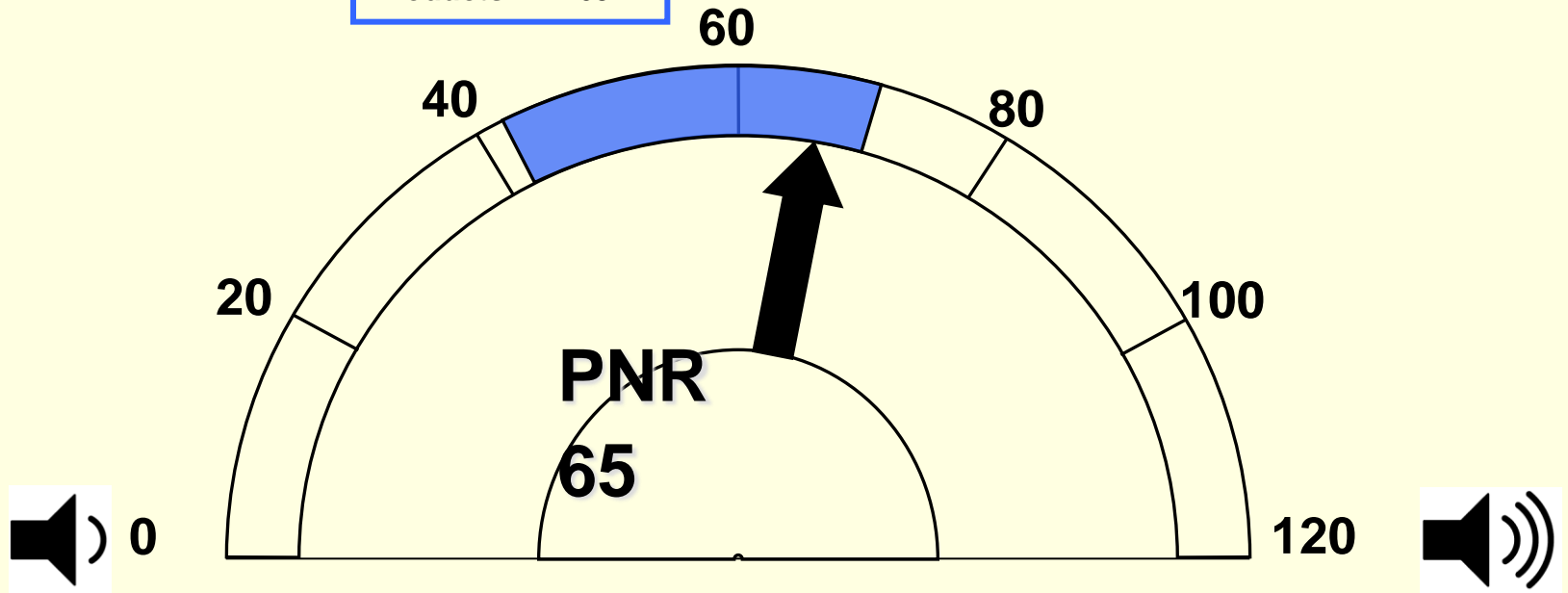
## Product Noise Ratings for the General Public: **The New PNR Scheme**

- The Product Noise Rating can be displayed in at least four different manners...

# "Noise-ometer"

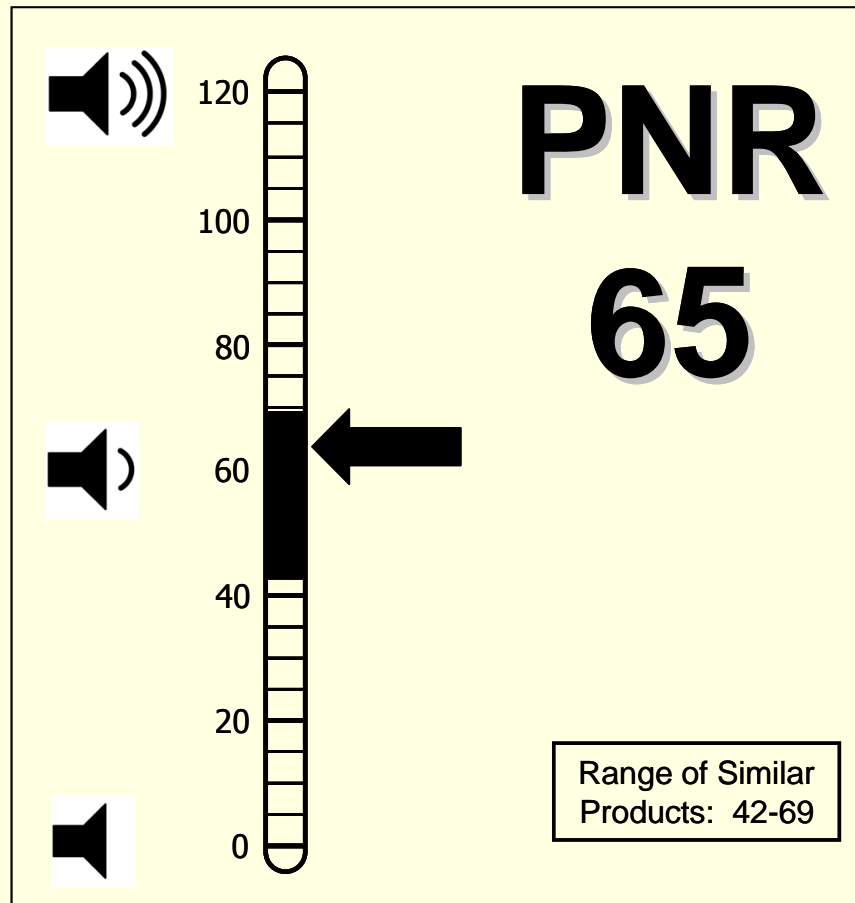
1A. Icon Version

Range of Similar  
Products: 42-69



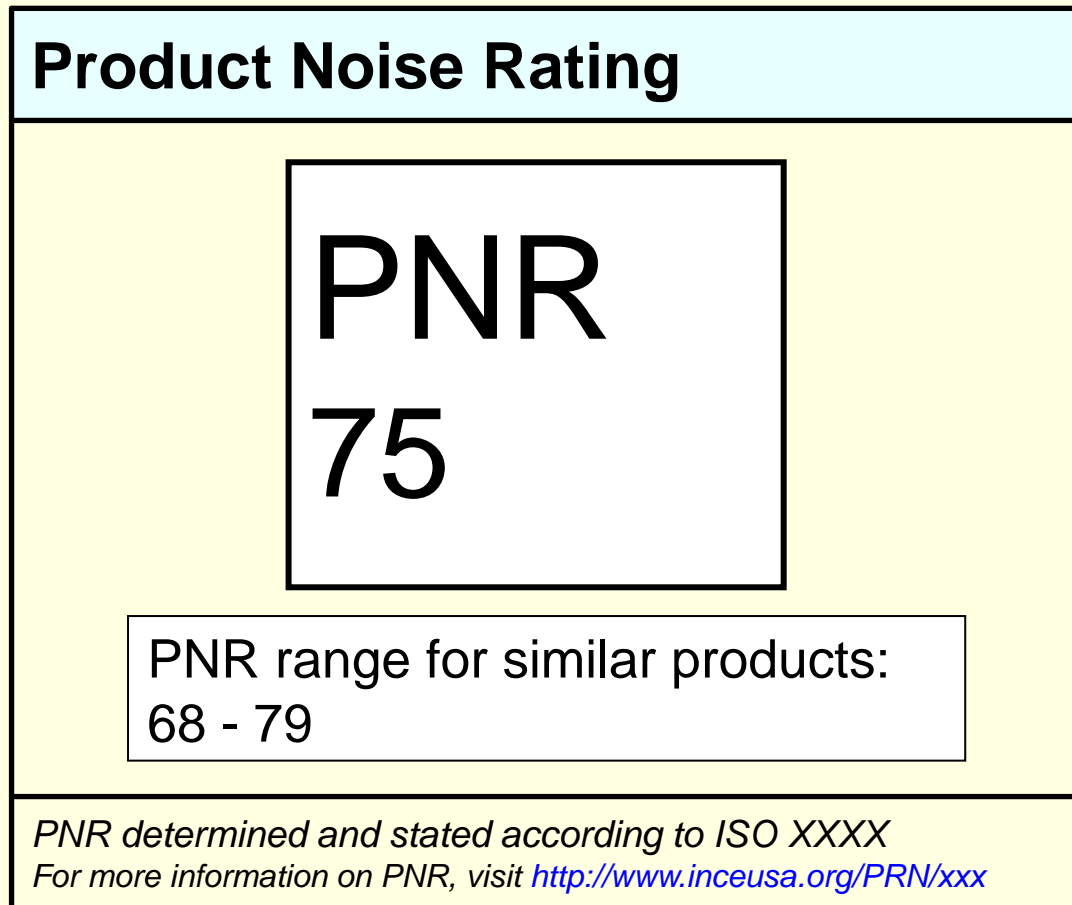
More information on Product Noise Ratings and what the PNR value means can be found at <http://www.xxx.yyy/noise/PNR.html>

## 1B. Alternate Icon Version



More information on Product Noise Ratings and what the PNR value means can be found at <http://www.xxx.yyy/noise/PNR.html>

## Product Noise Ratings for the General Public: **The New PNR Scheme**



2. "Label" or  
"Tag"  
Version



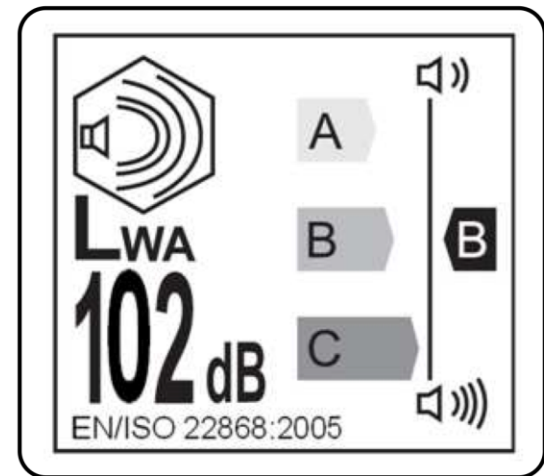
## Product Noise Ratings for the General Public: **The New PNR Scheme**

3. Simple  
“PNR = Value”  
Version

**PNR = 65**

# Noise Labelling

An integrated approach to noise reduction

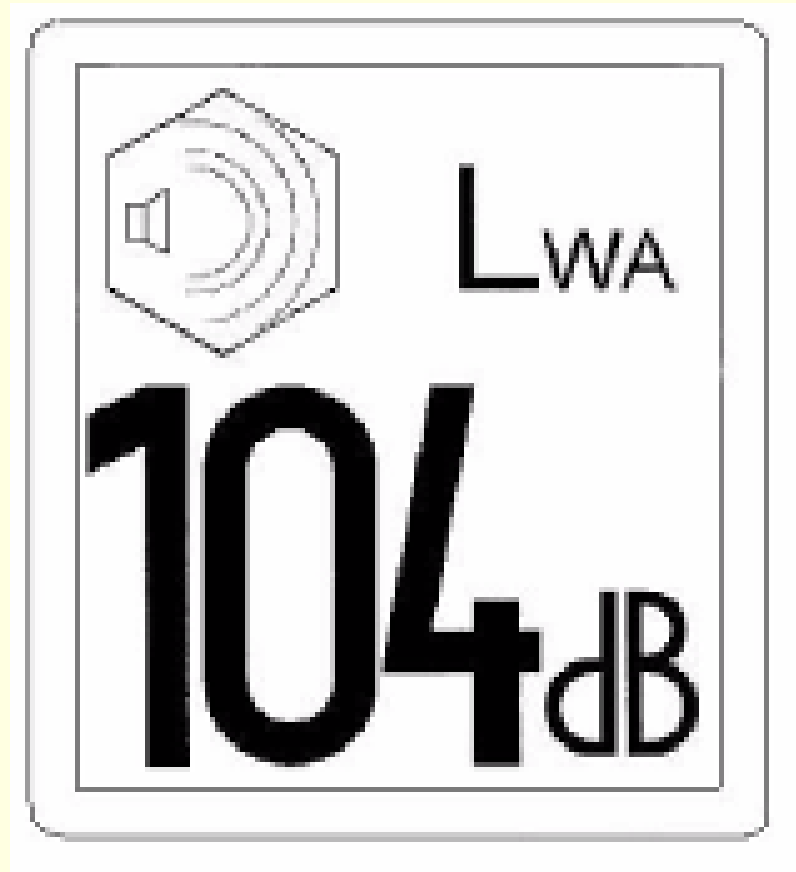


EGMF

European Garden Machinery industry Federation

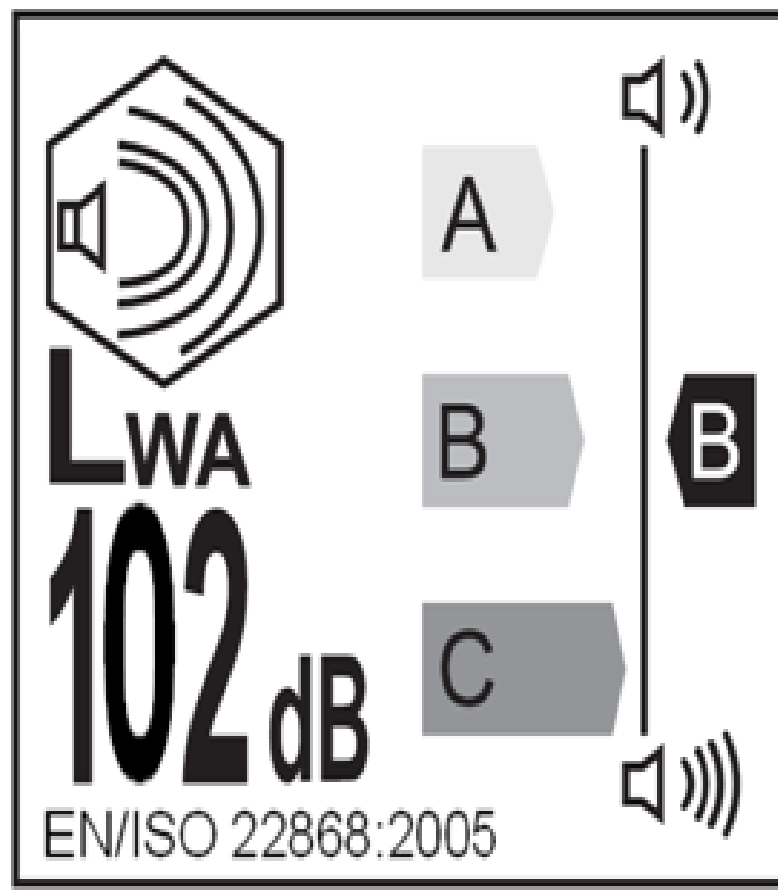
## Thoughts on EGMF's proposal for a revised label for outdoor equipment

Current  
label from  
EC  
2000/14/EC



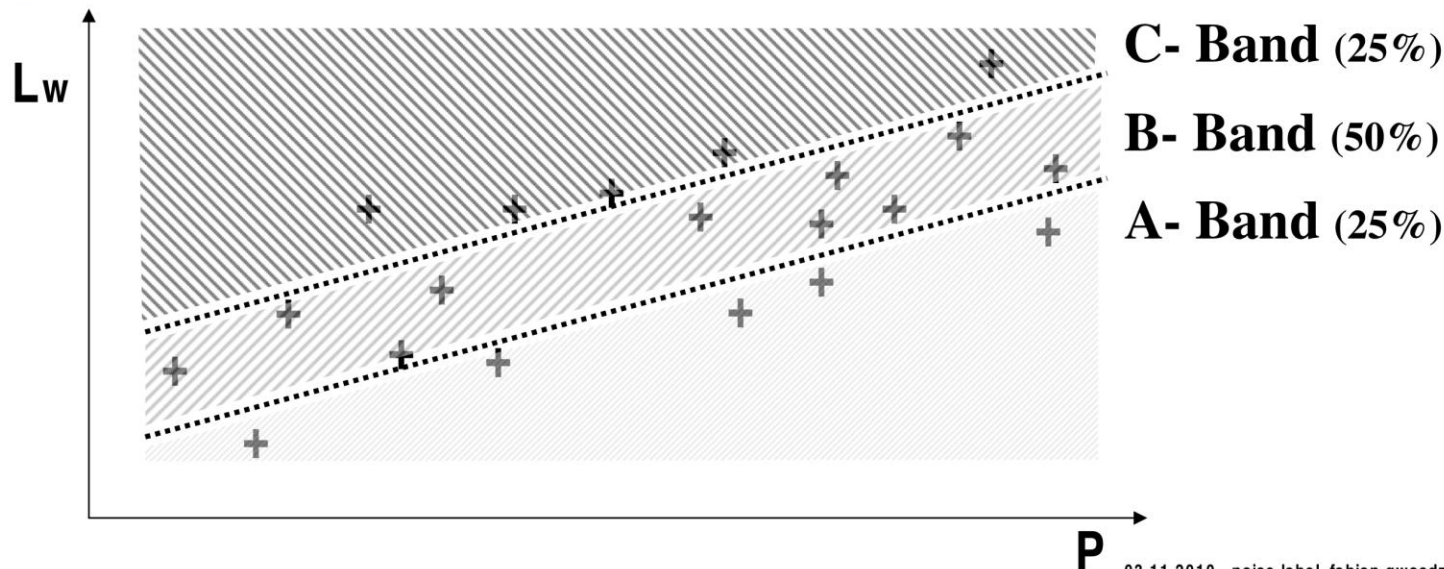
## Thoughts on EGMF's proposal for a revised label for outdoor equipment

EGMF's  
proposal

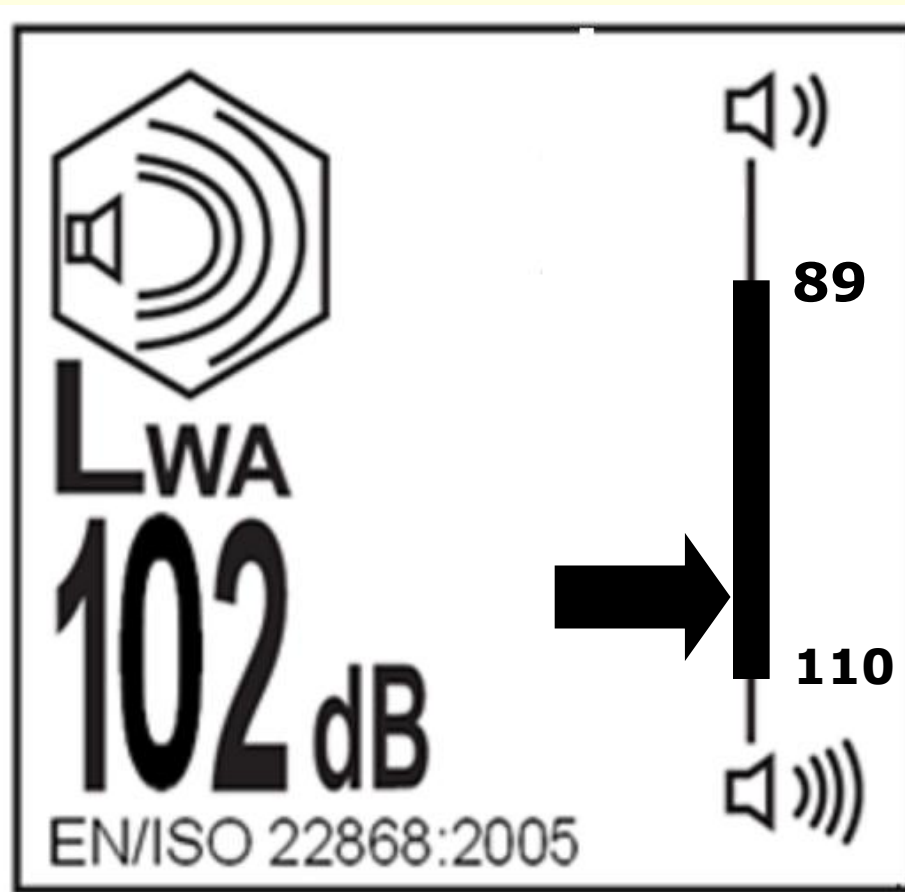


## II.) Definition of noise bands and test codes

- Establishment of the levels for the bands for each product category to be performed within the product standards committees with input from all stakeholders under supervision of CEN.
  1. Collection of noise data
  2. Definition of noise bands according to 25%, 50% and 25% of products in the market
  3. Update and revision of noise bands during according to the state art during revision of standard
- Definition of noise band values and test code to be included in harmonized standards



## Thoughts on EGMF's proposal for a revised label for outdoor equipment



And here is  
what it  
could look  
like with  
PNR instead  
of LWA

