

R41WG database

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IMMA analysis

Material for discussion at data
expert meeting on 22 November
2006 in Ann Arbor, MI

Geneva, November 8th 2006

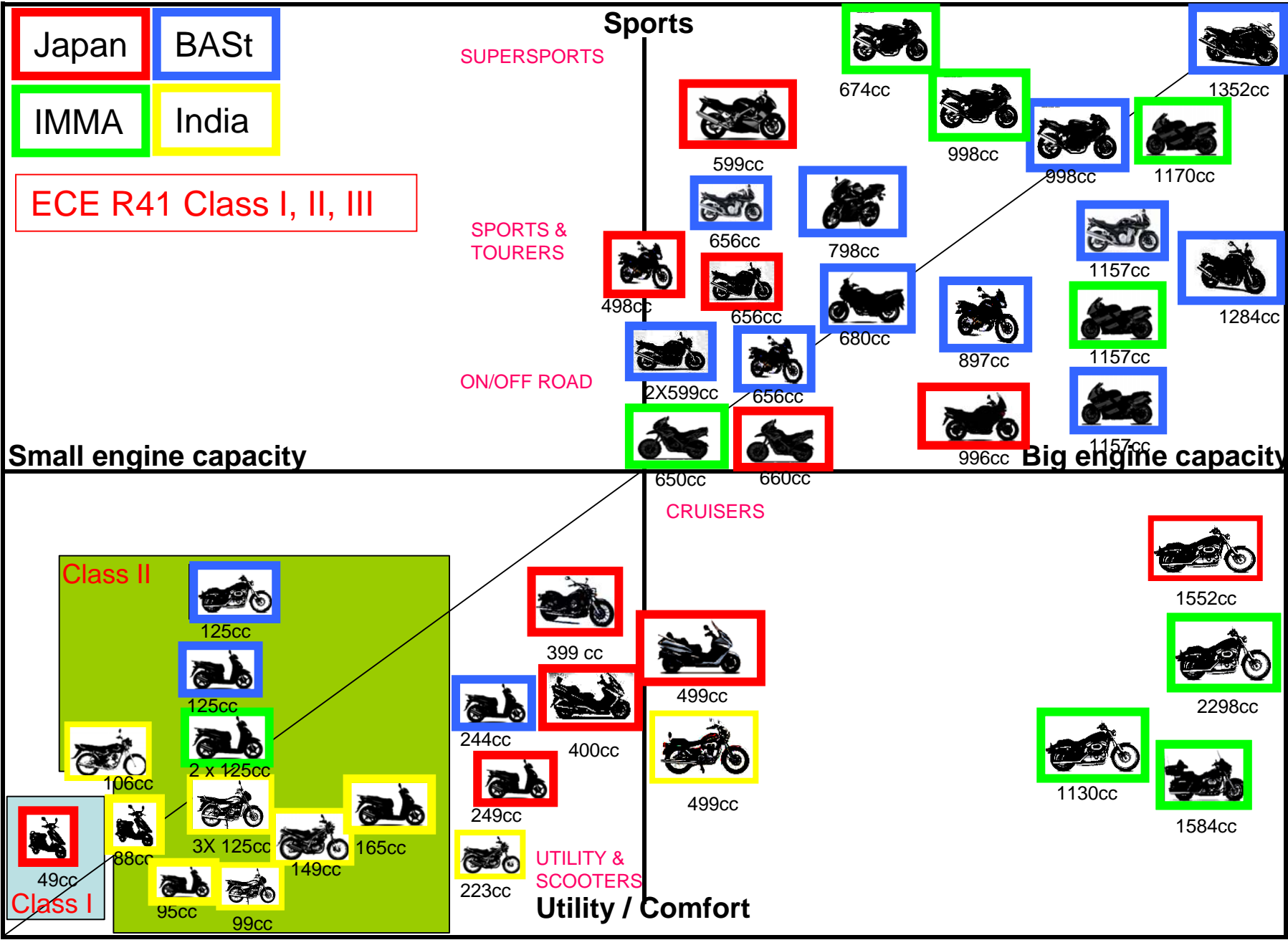
Content

1. R41WG database composition / coverage
2. Analysis of noise level distribution for ISO362-2 vs ECE R41
3. Assessment of validity and practicability of ASEP concept

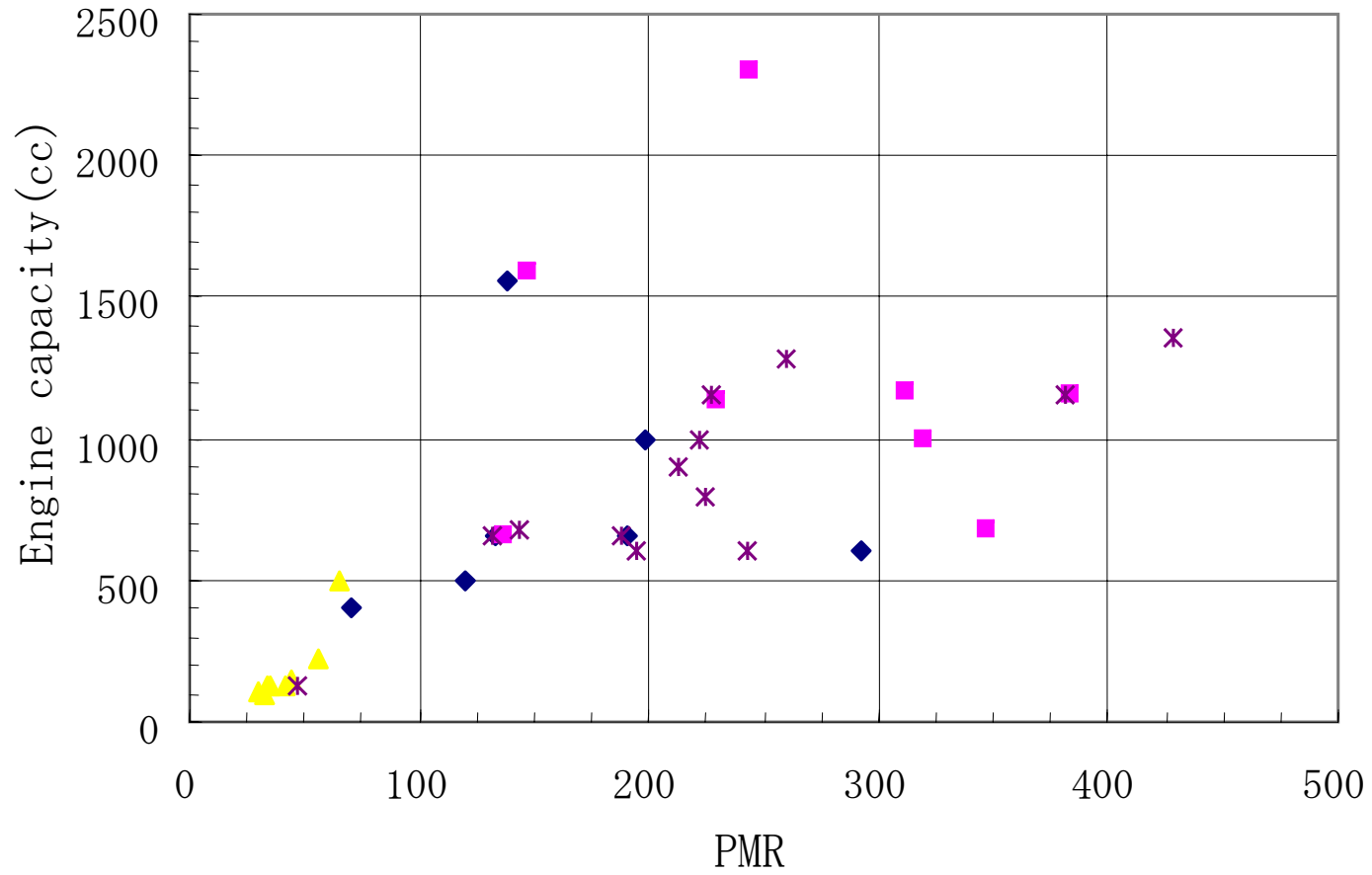
1. R41WG database

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composition / coverage

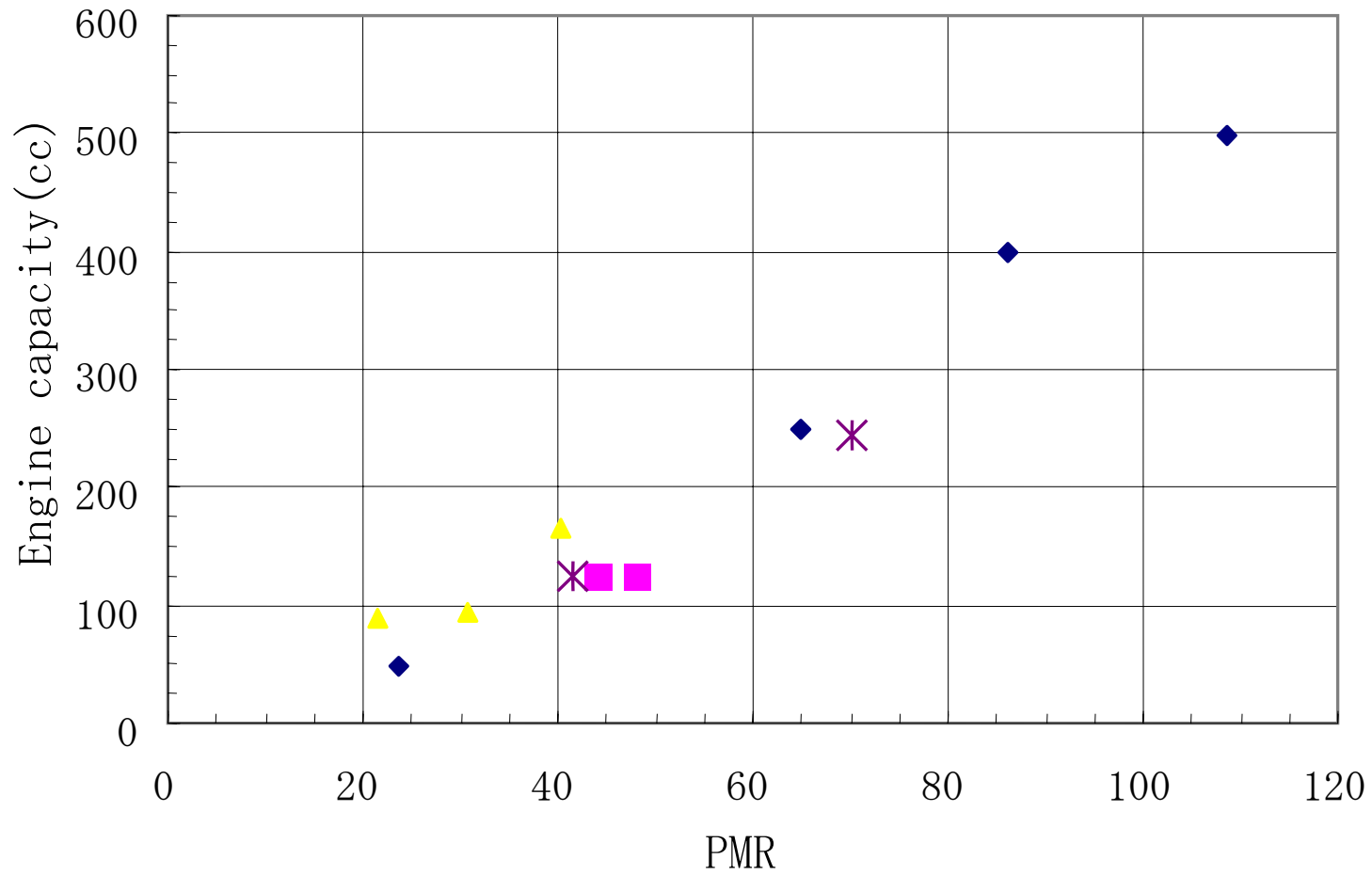


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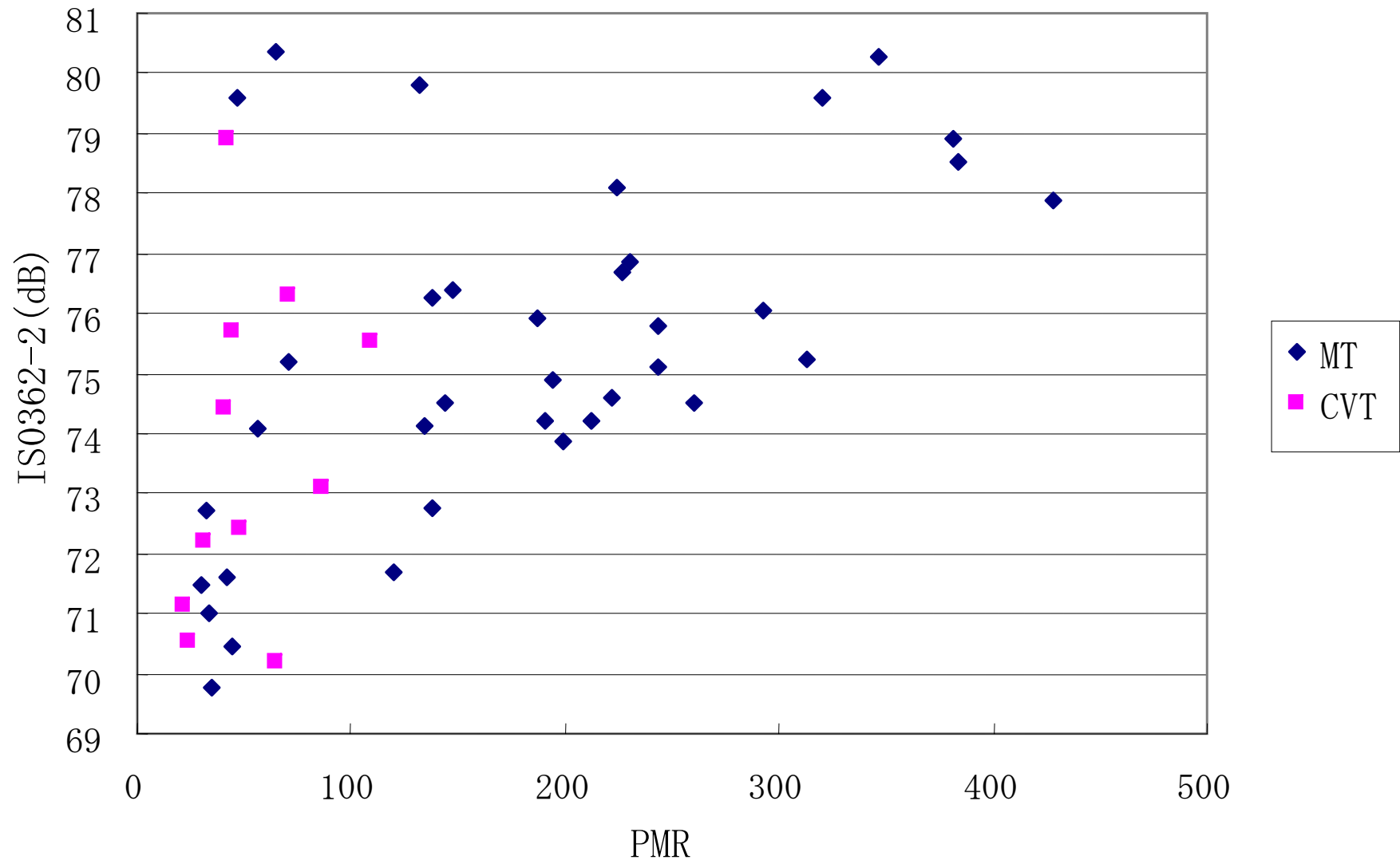
Total : 36 vehicles

CVT



Total : 11 vehicles

2. Analysis of noise level distribution for ISO362-2 vs ECE R41



All motorcycles

Limit value (dB)	Coverage	
	No of vehicles	(%)
80	45	95.7
79	42	89.4
78	38	80.9
77	37	78.7

Total : 47 vehicles

Class I

Limit value (dB)	Coverage	
	No of vehicles	(%)
75	1	100
74 - 71	1	100
70	0	0

Total : 1 vehicle

Class II

Limit value (dB)	Coverage	
	No of vehicles	(%)
77	11	84.6
76	11	84.6
75	10	76.9
74	9	69.2

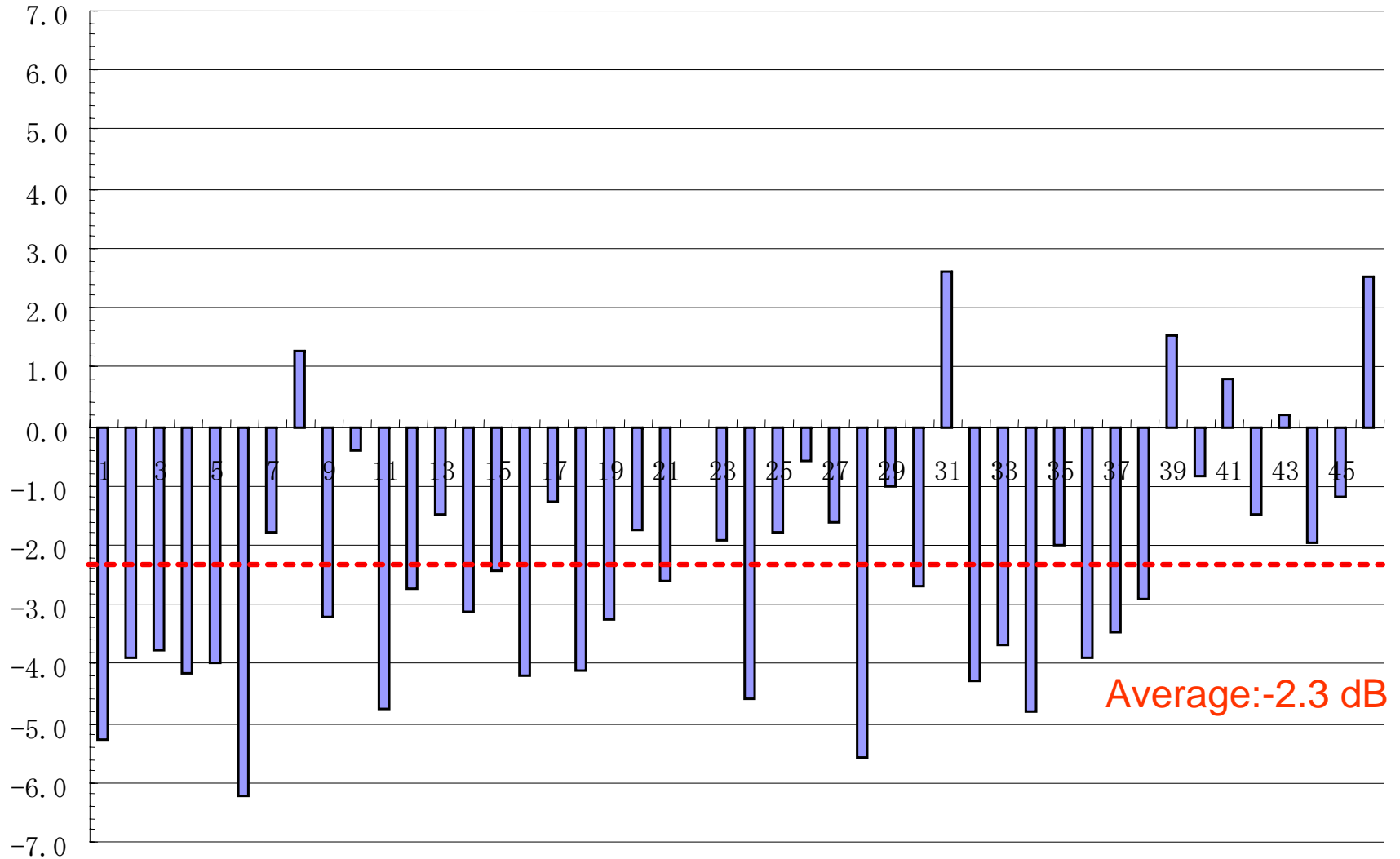
Total : 13 vehicles

Class III

Limit value (dB)	Coverage	
	No of vehicles	(%)
80	31	93.9
79	29	87.9
78	26	78.8
77	25	75.7

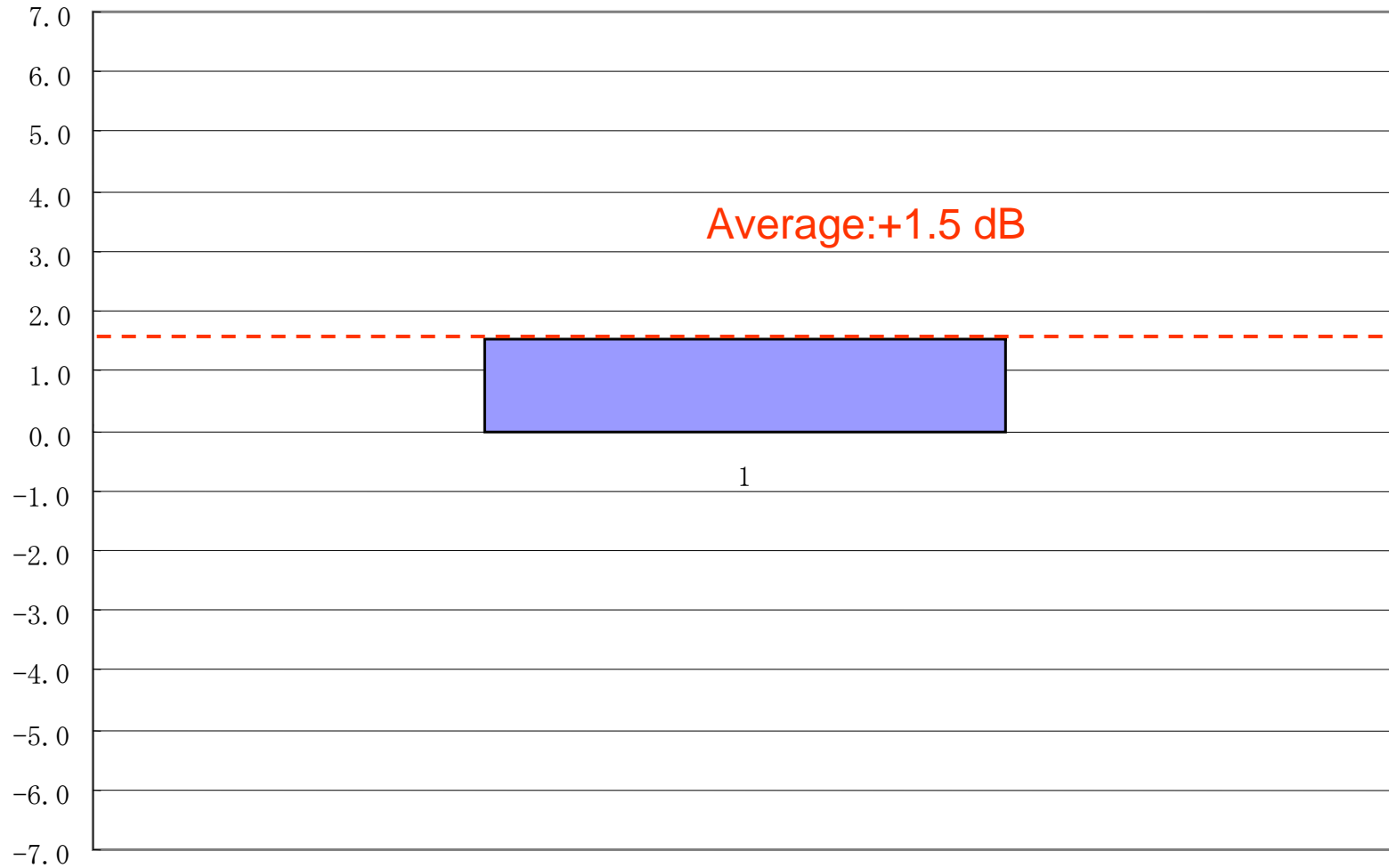
Total : 33 vehicles

ECE41-03 vs ISO362-2 (All)

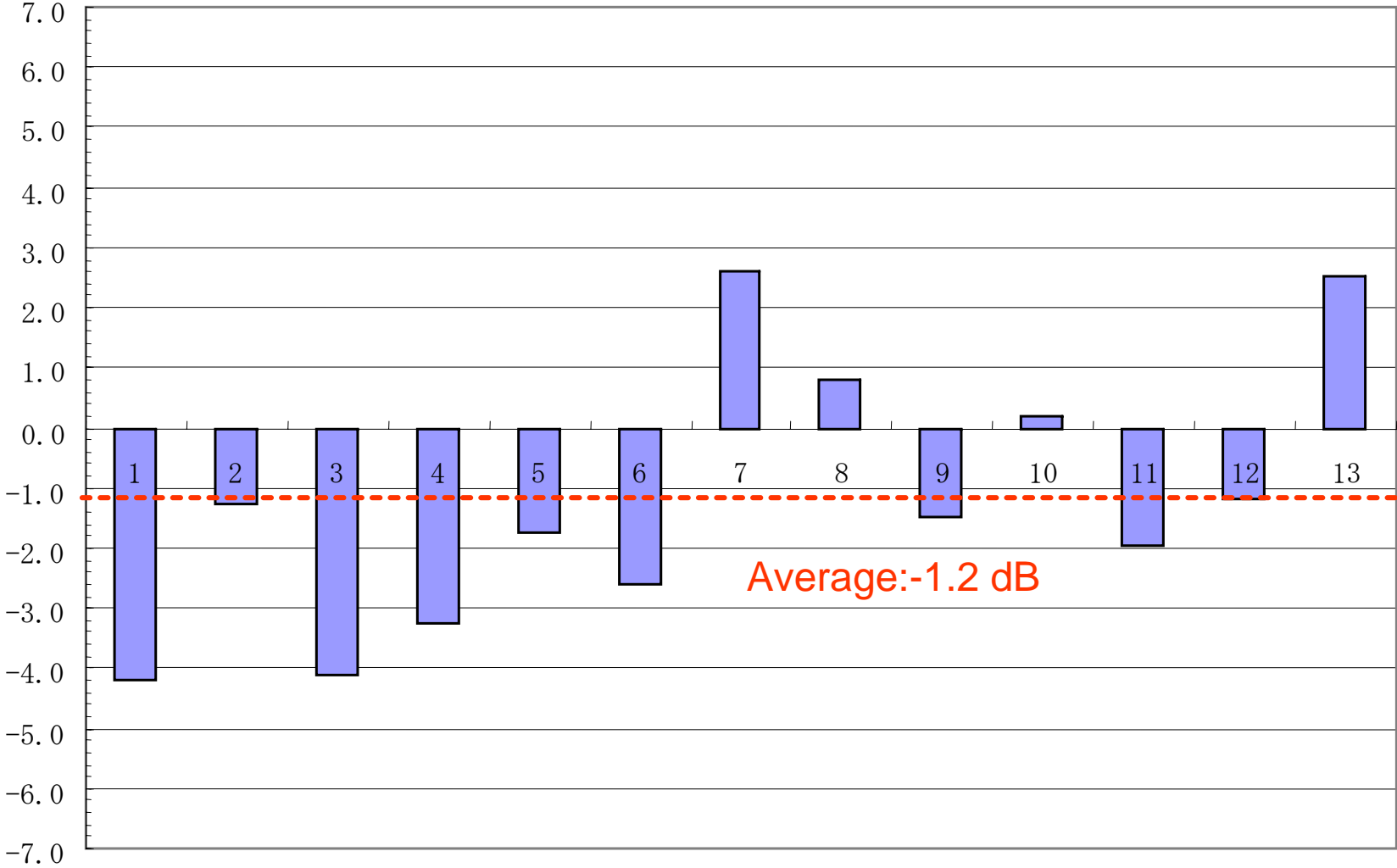


Average: -2.3 dB

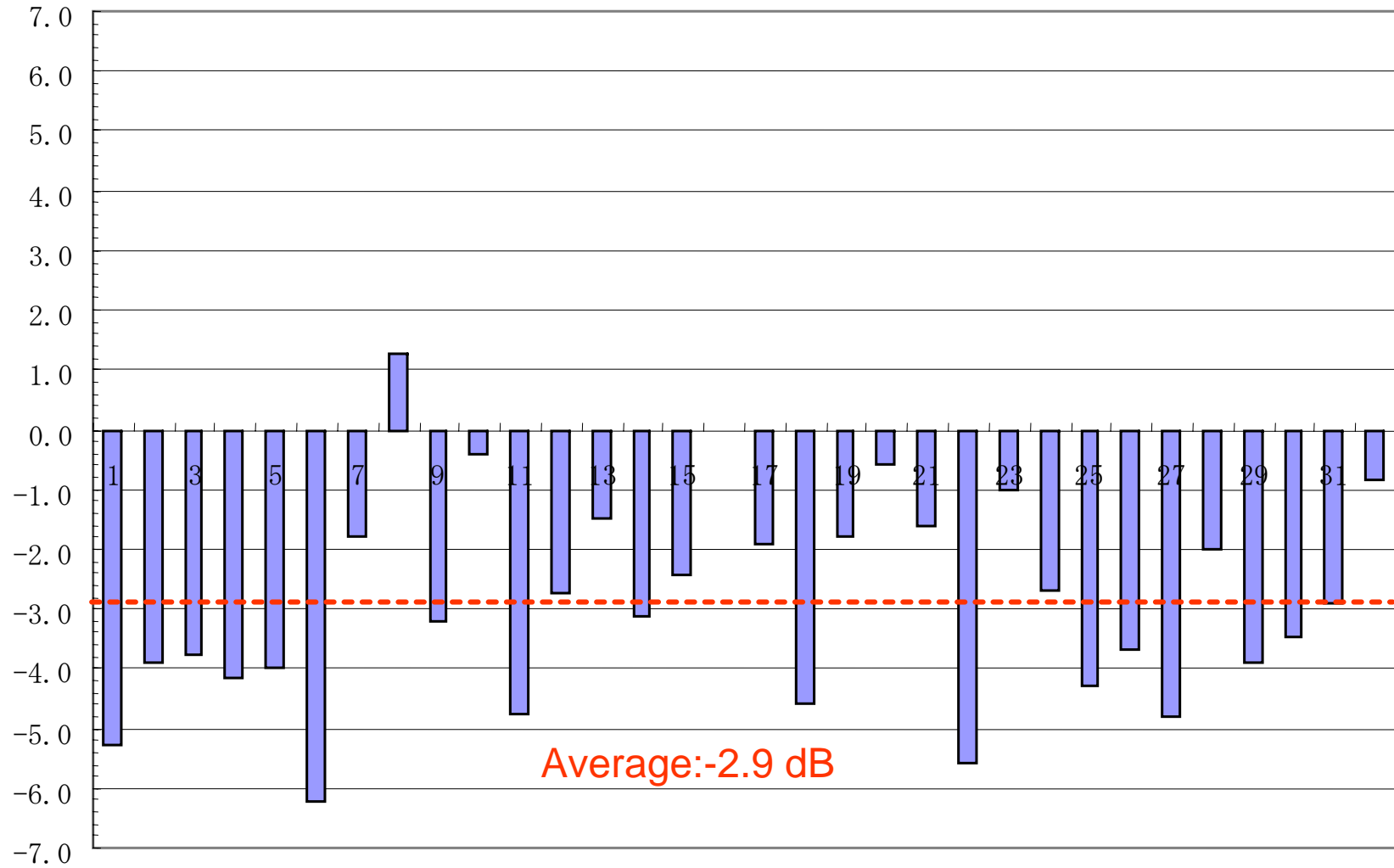
ECE41-03 vs ISO362-2 (Class I)



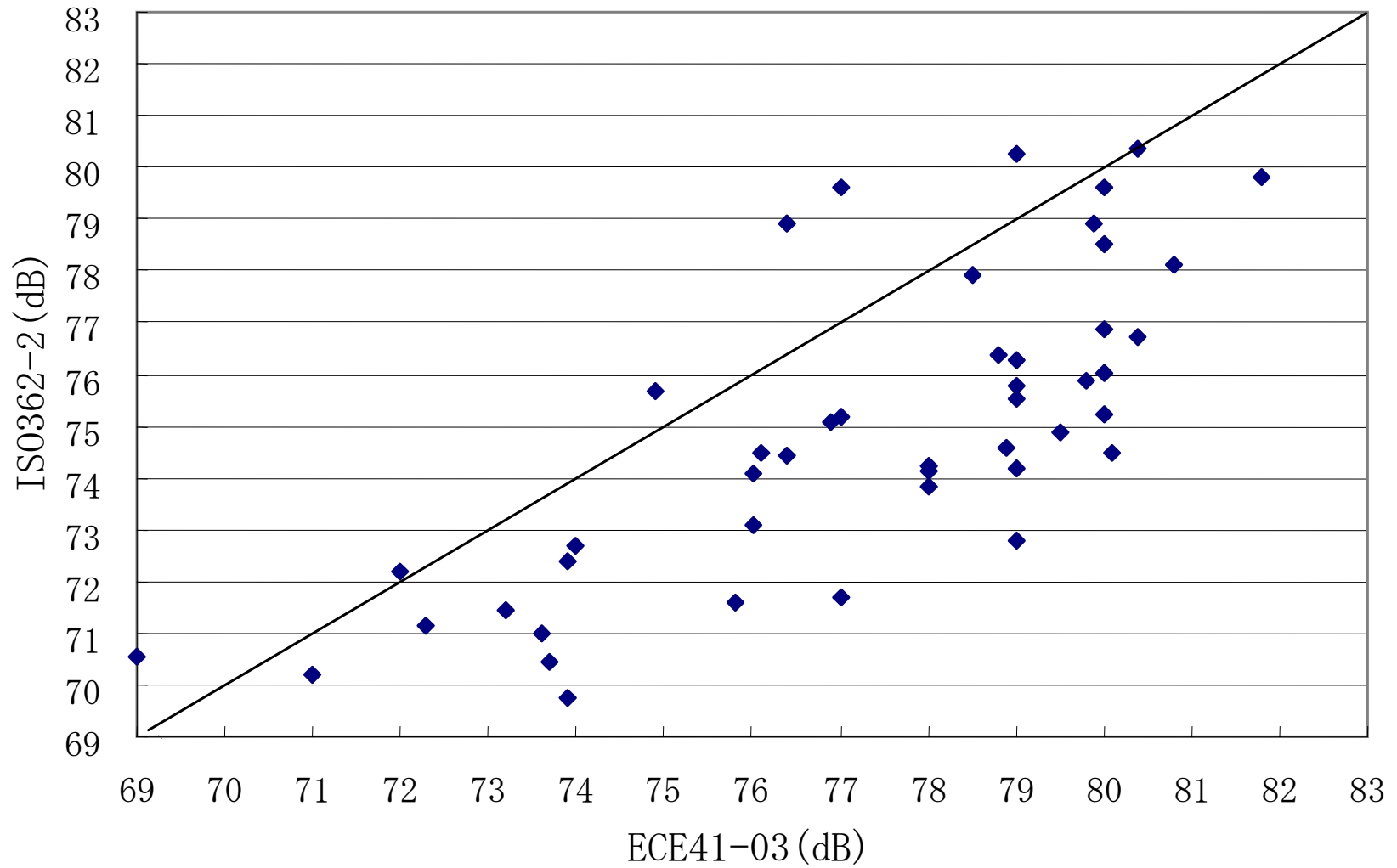
ECE41-03 vs ISO362-2 (Class II)



ECE41-03 vs ISO362-2 (Class III)

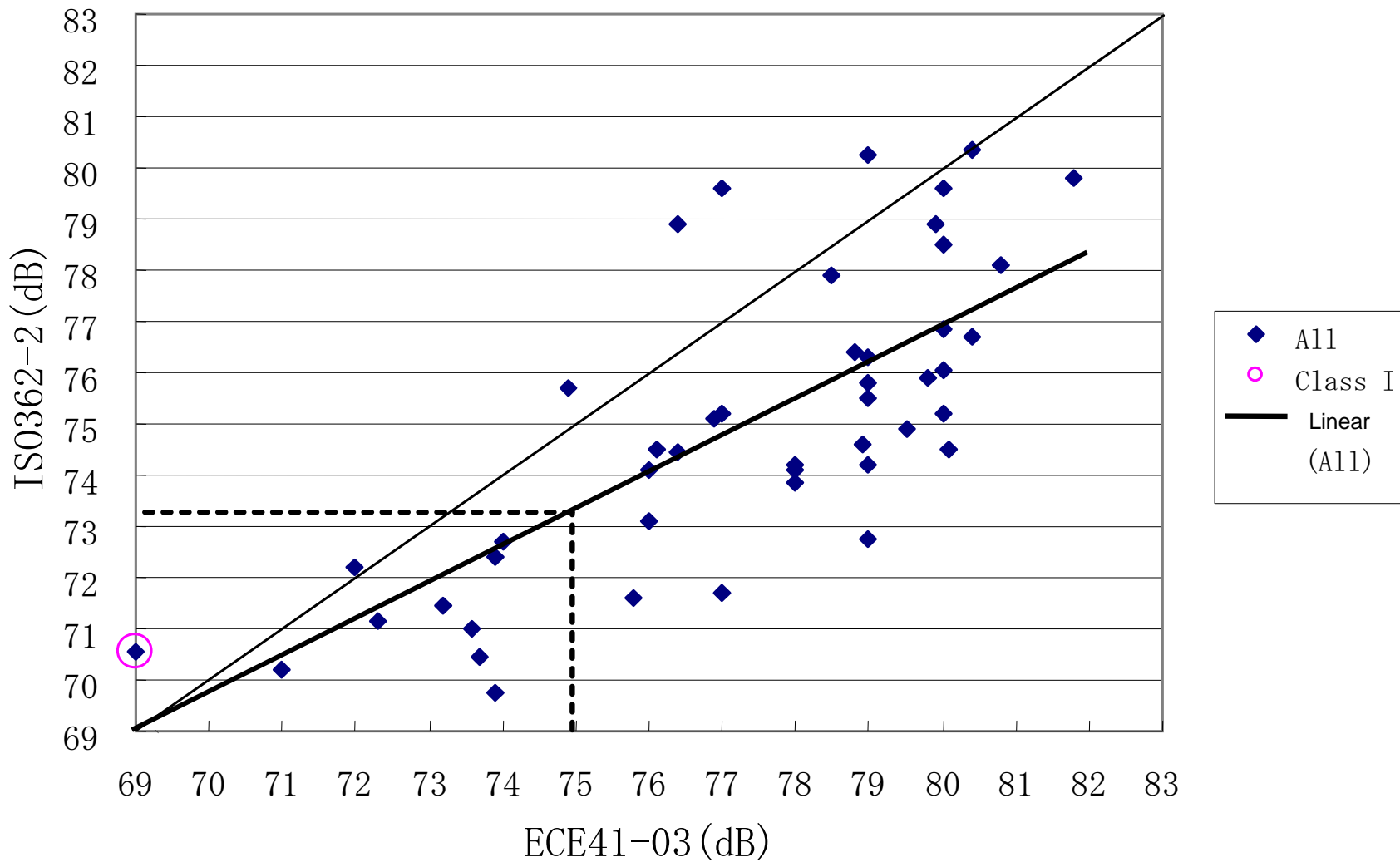


ECE41-03 vs ISO362-2

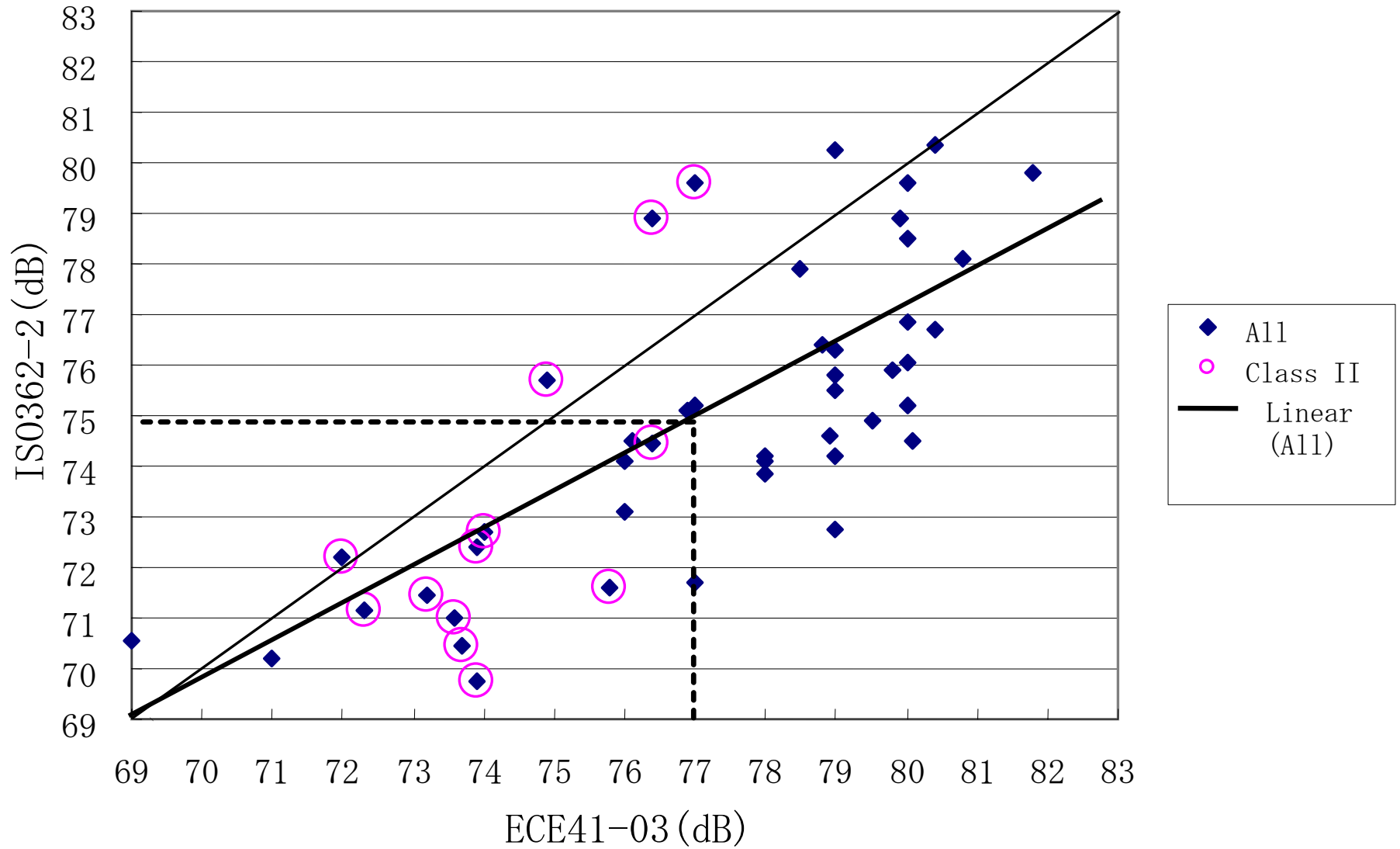


Total : 46 vehicles

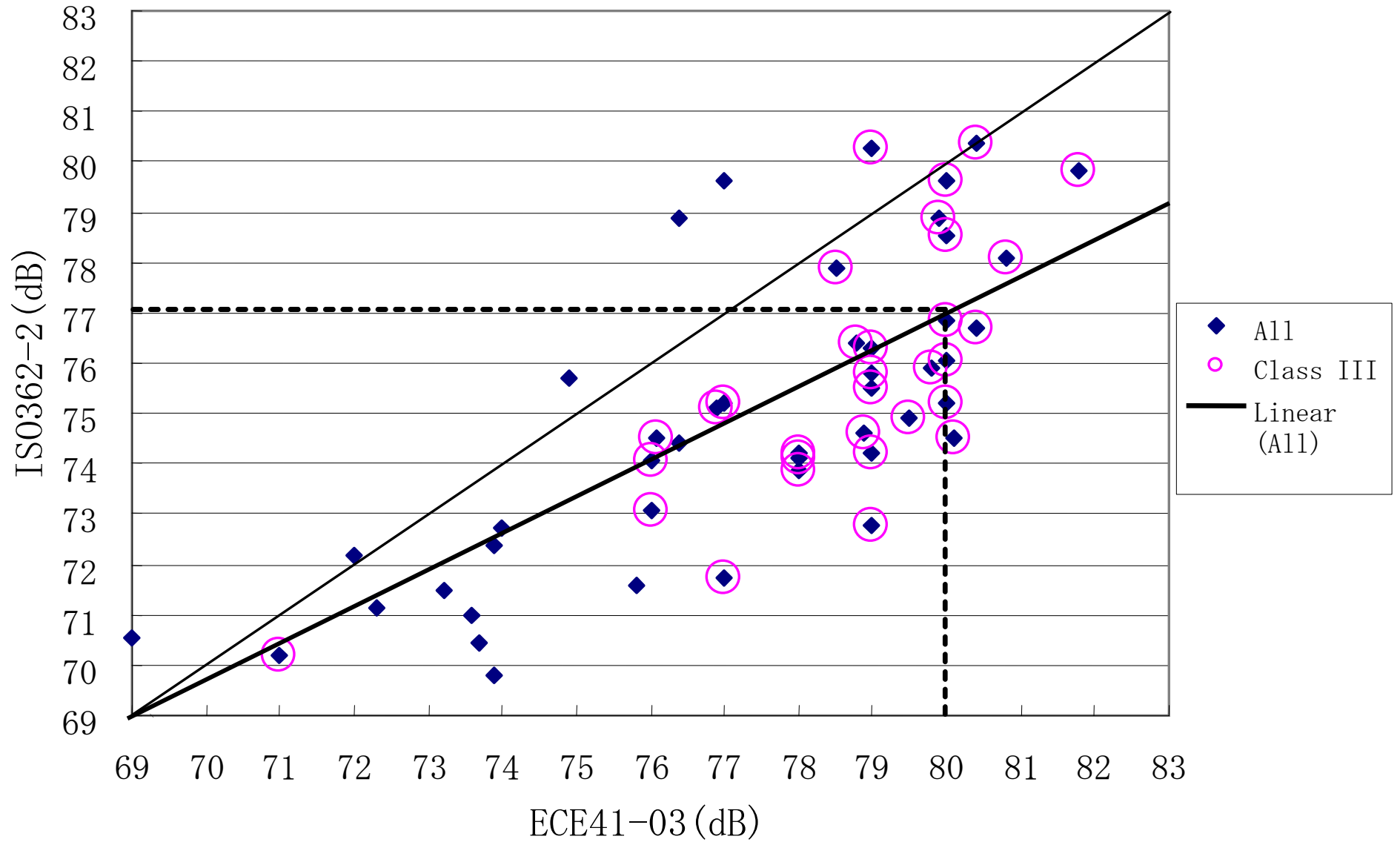
Class I ($\leq 80\text{cc}$)



Class II (>80, ≤ 175cc)



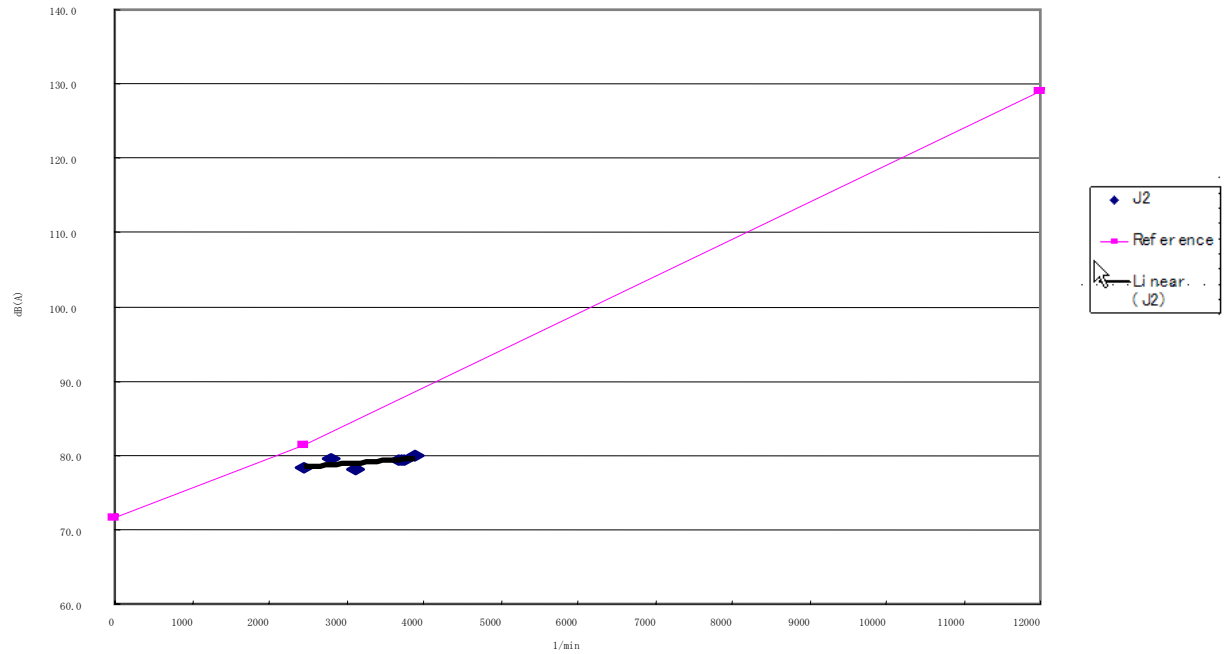
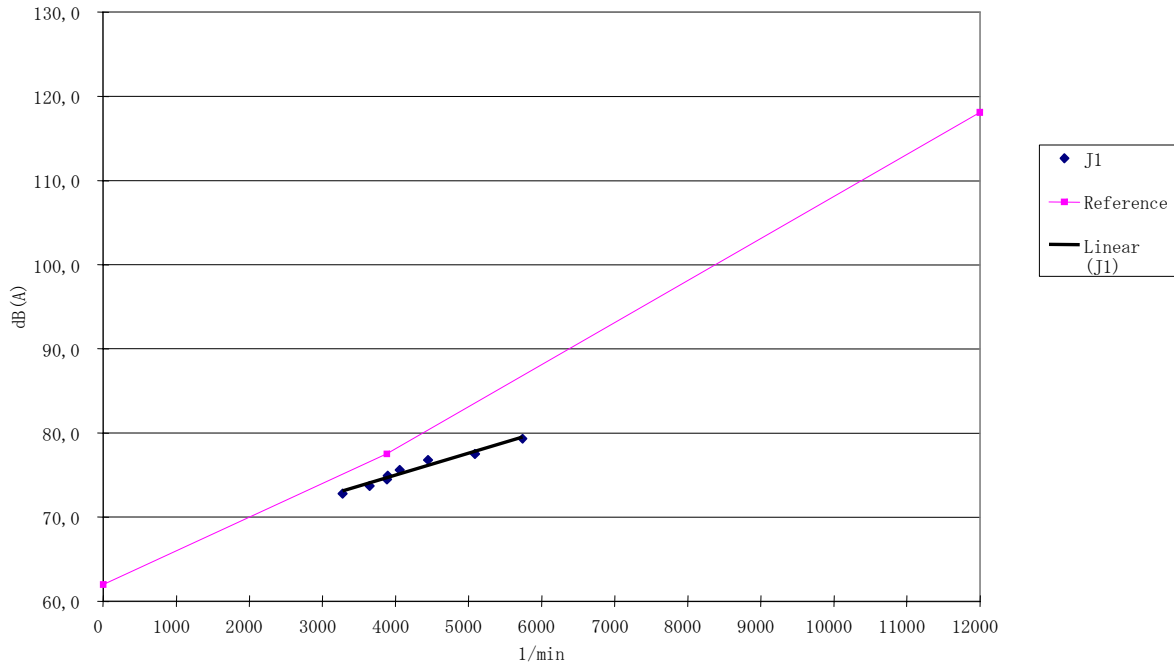
Class III (>175cc)



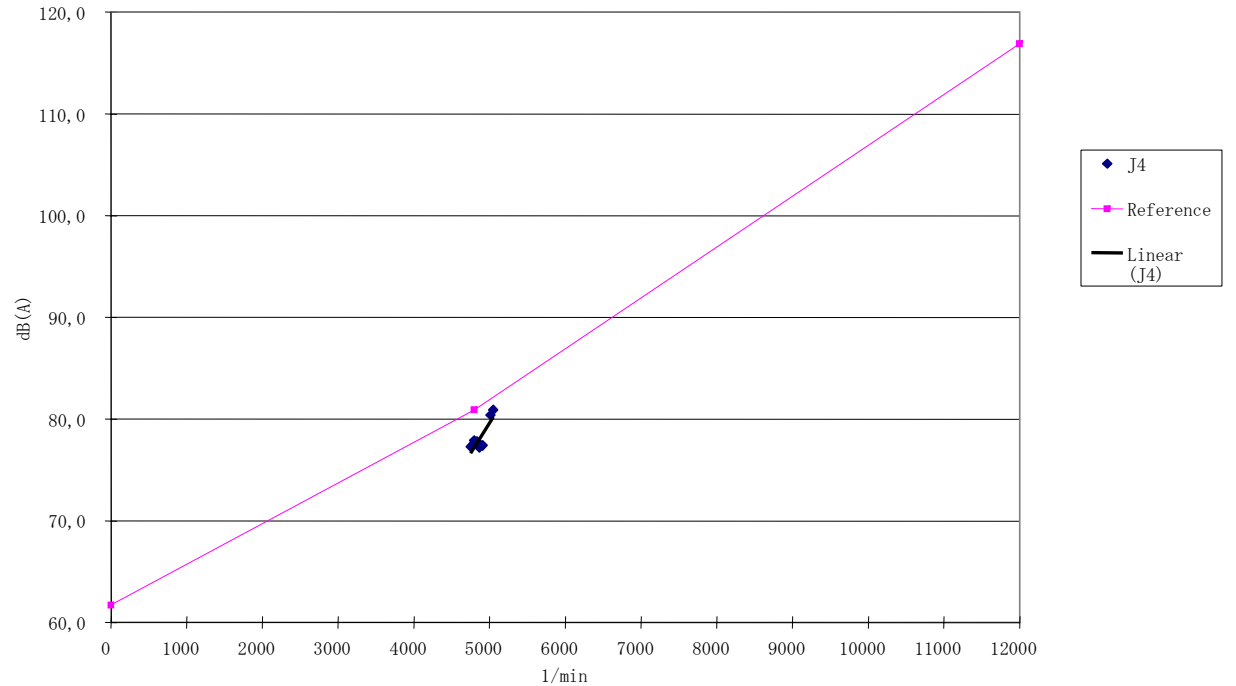
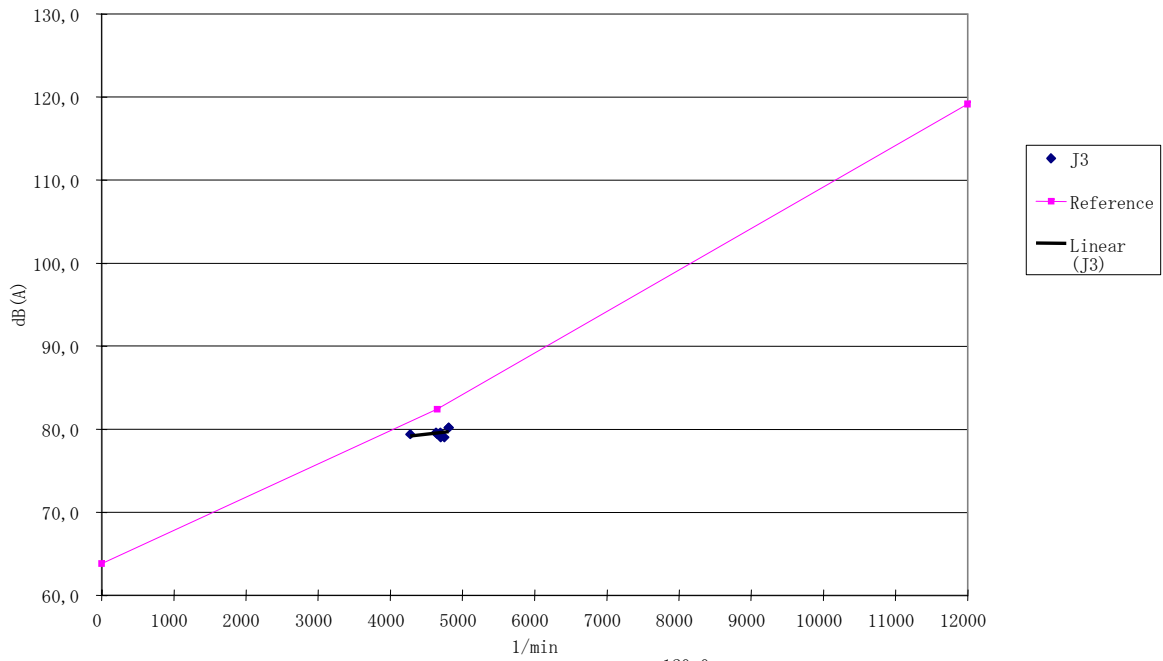
3. Assessment of validity and practicability of ASEP concept

Introductory remark:

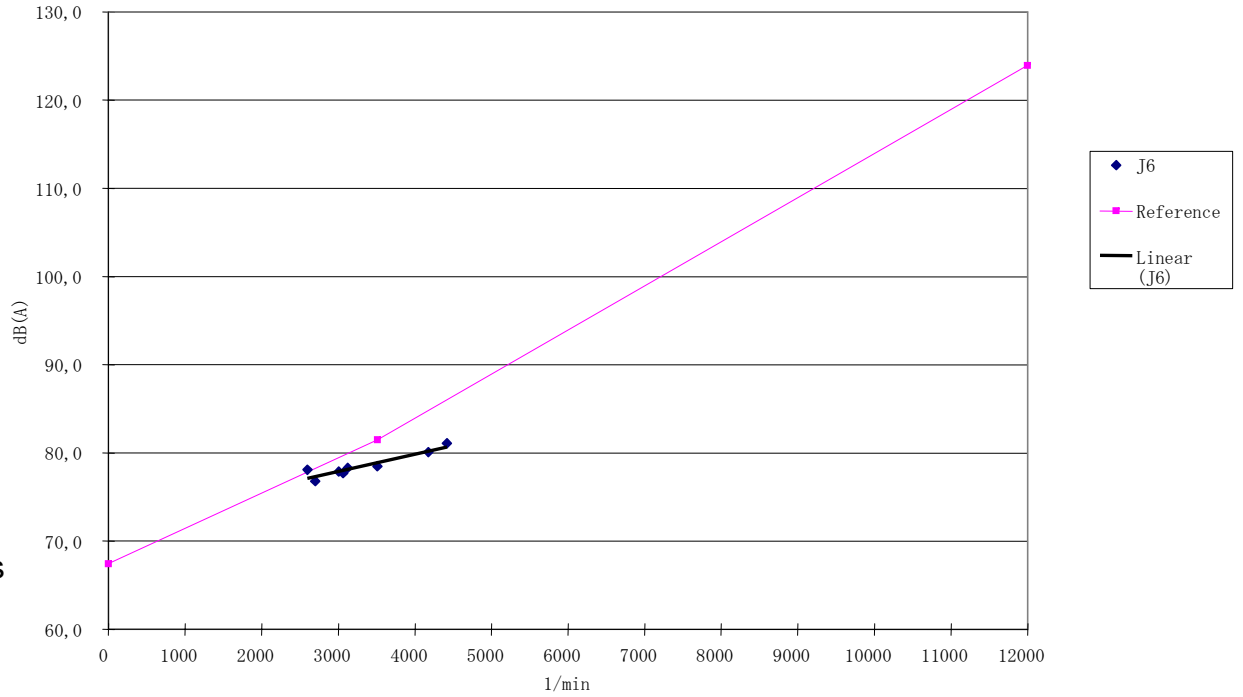
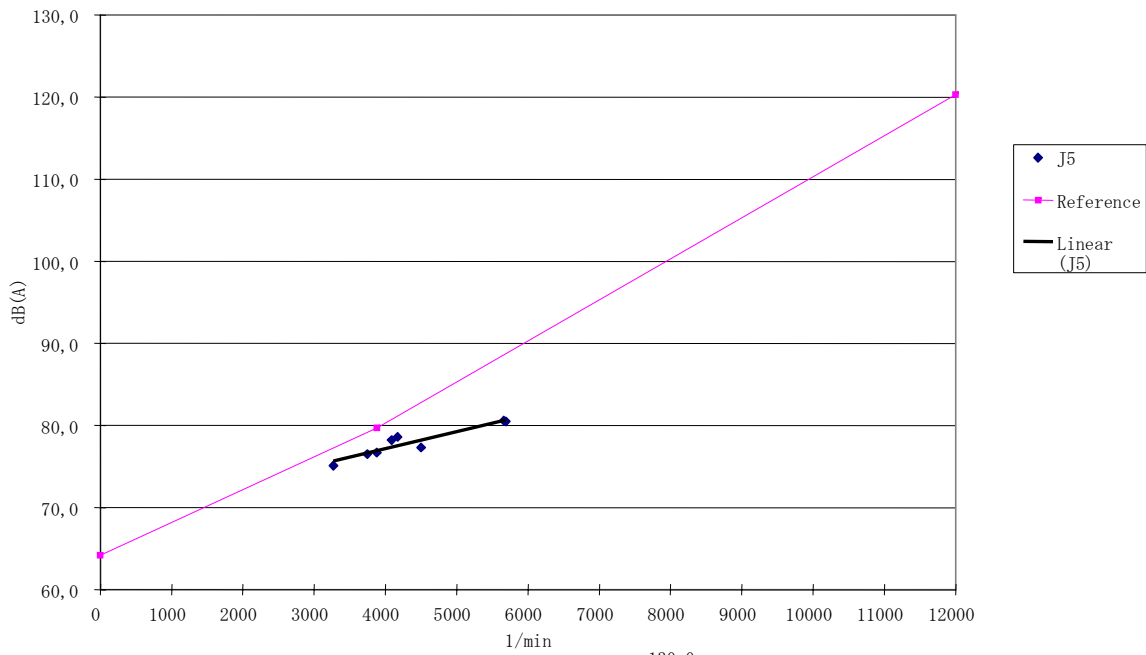
- The present analysis is based on the R41WG database in its most recent form; future complementary test data and insights could affect conclusions reached to date



Note
 ASEP graphs for Japanese motorcycles include data for 4th gear testing as per Japanese noise legislation.

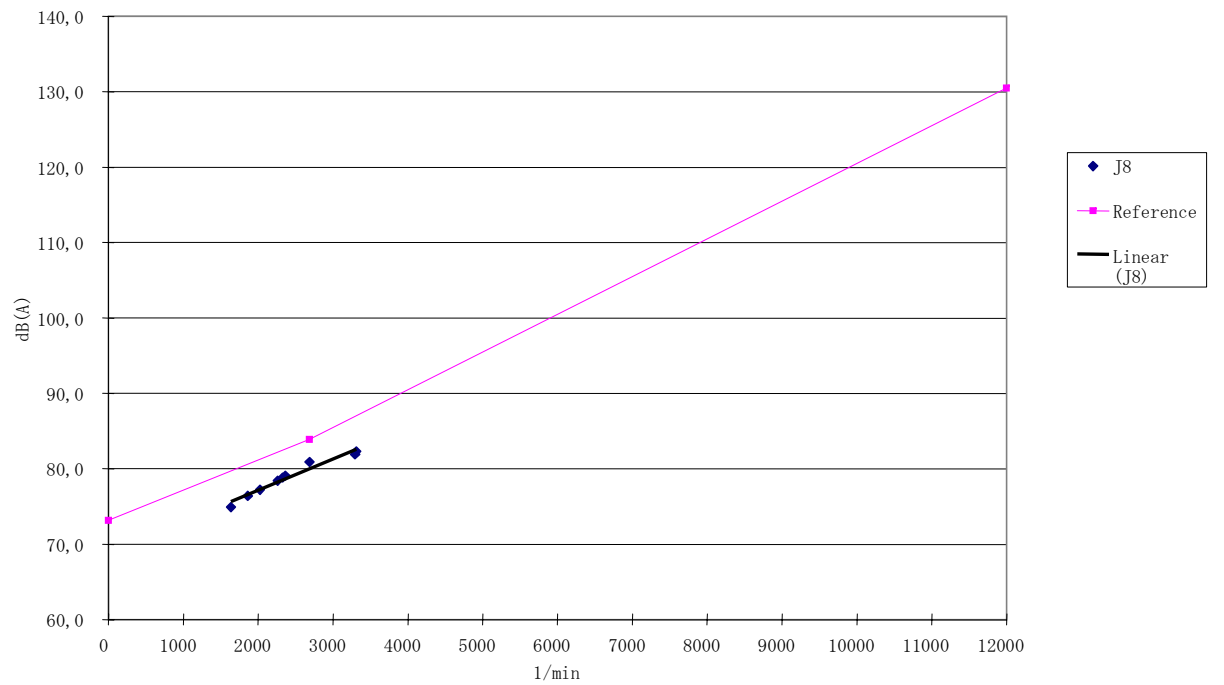
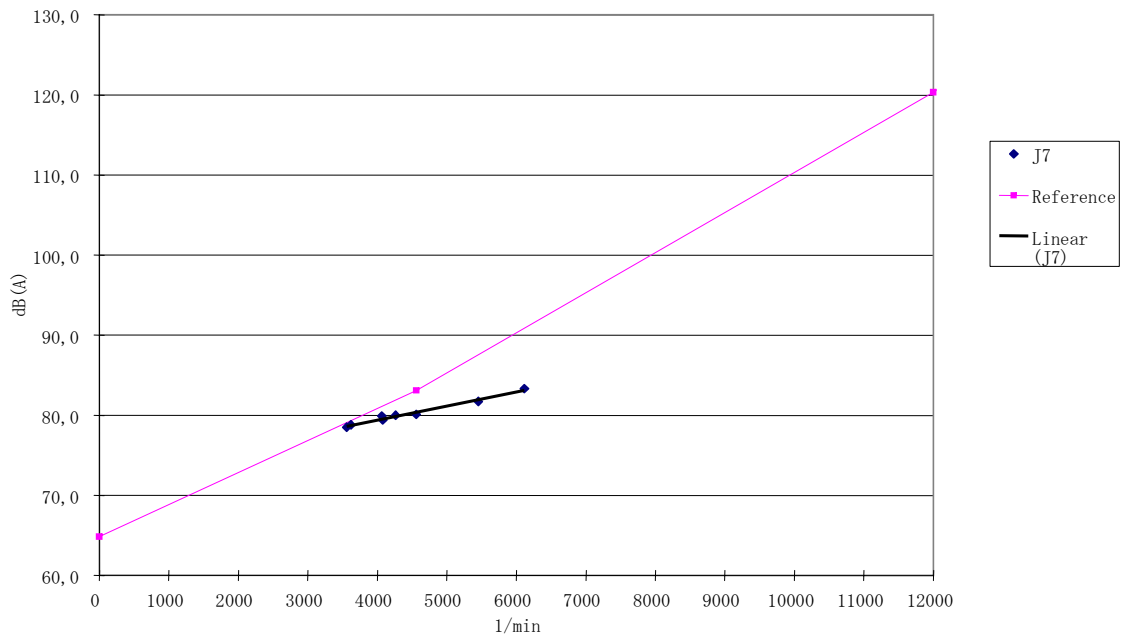


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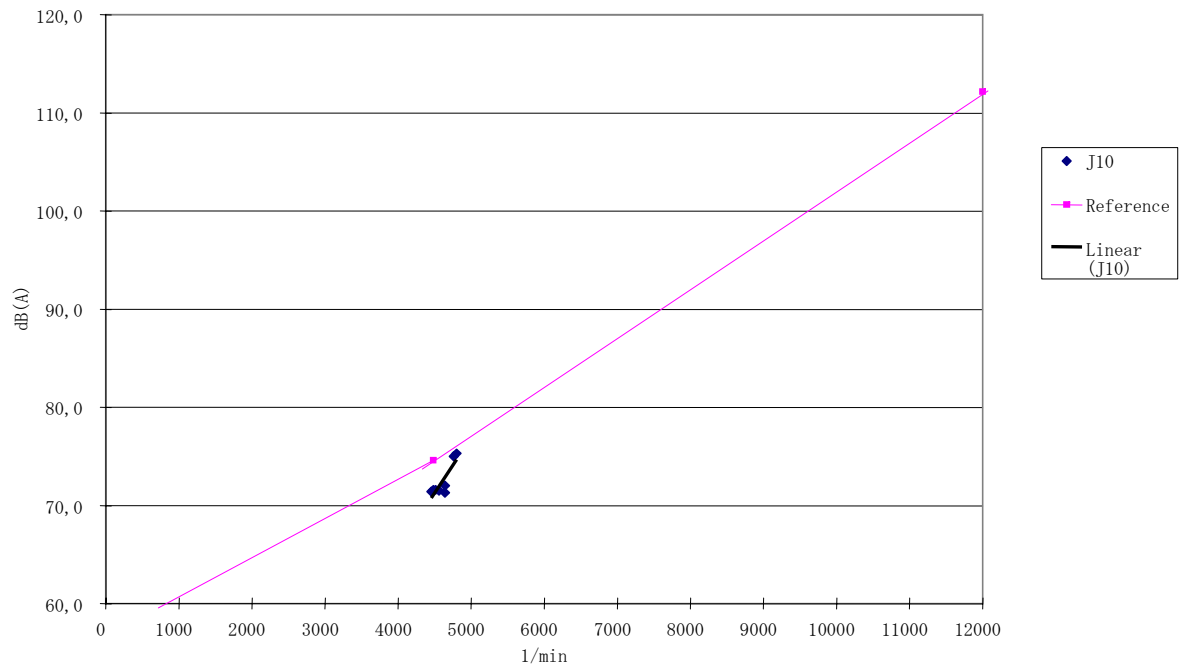
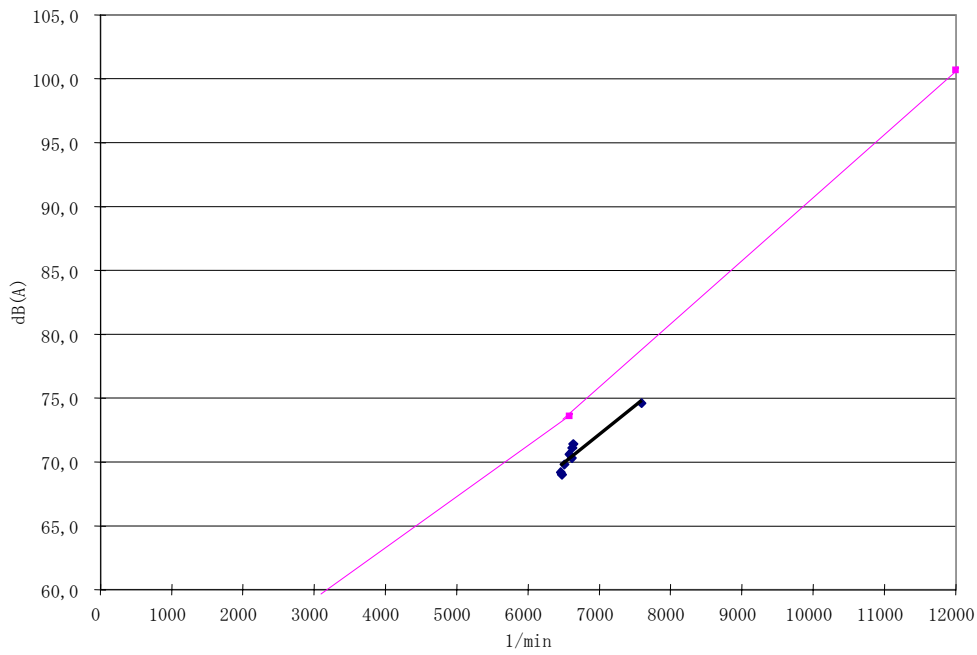


Note

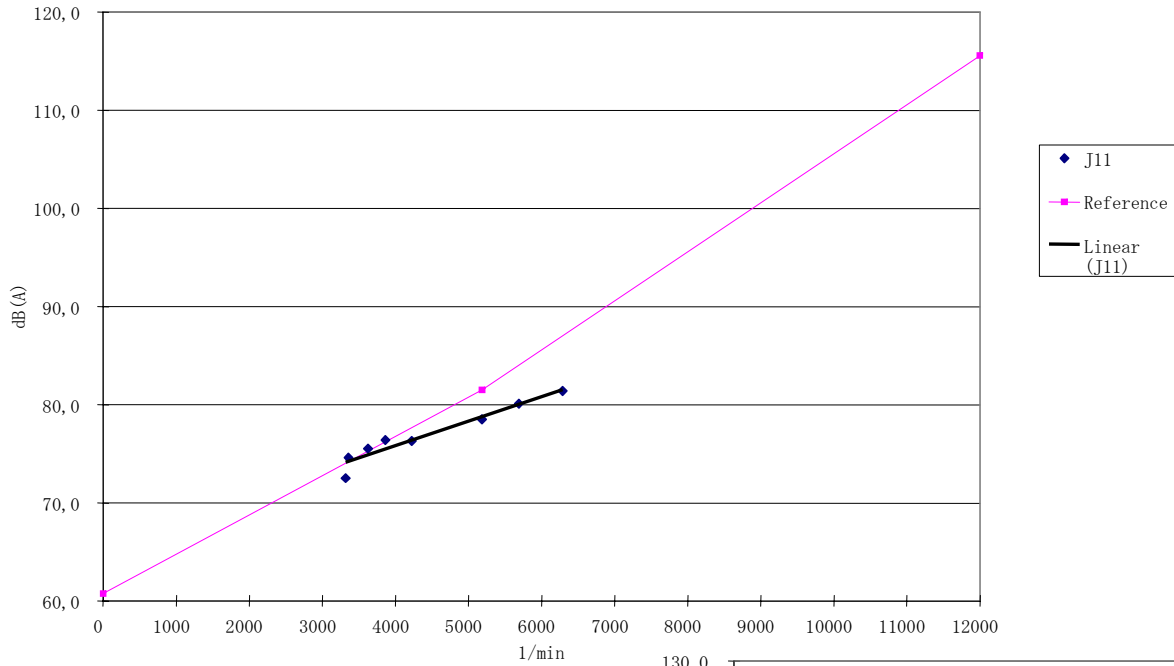
ASEP graphs for Japanese motorcycles include data for 4th gear testing as per Japanese noise legislation.



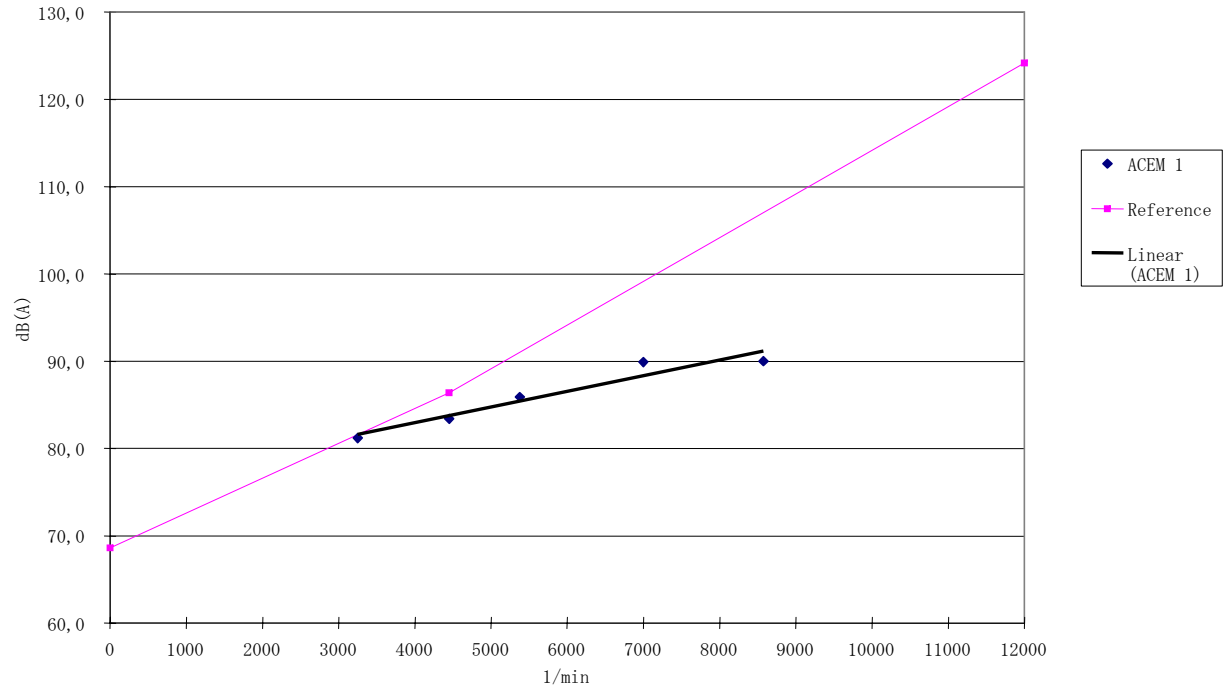
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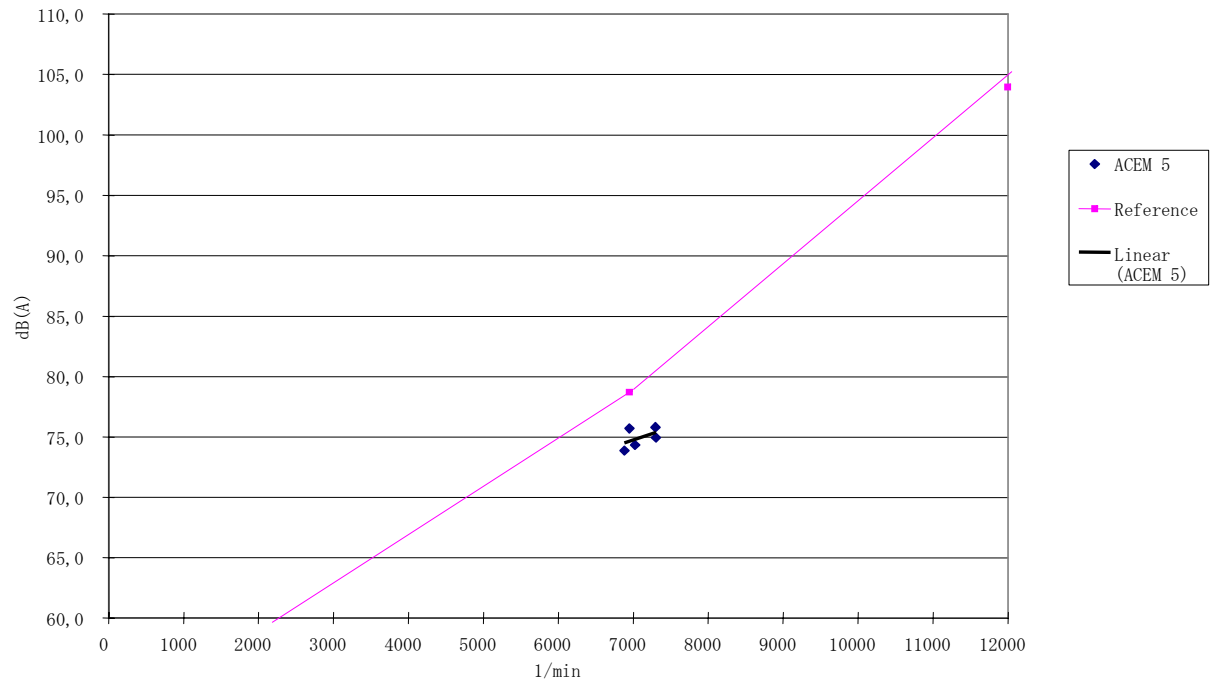
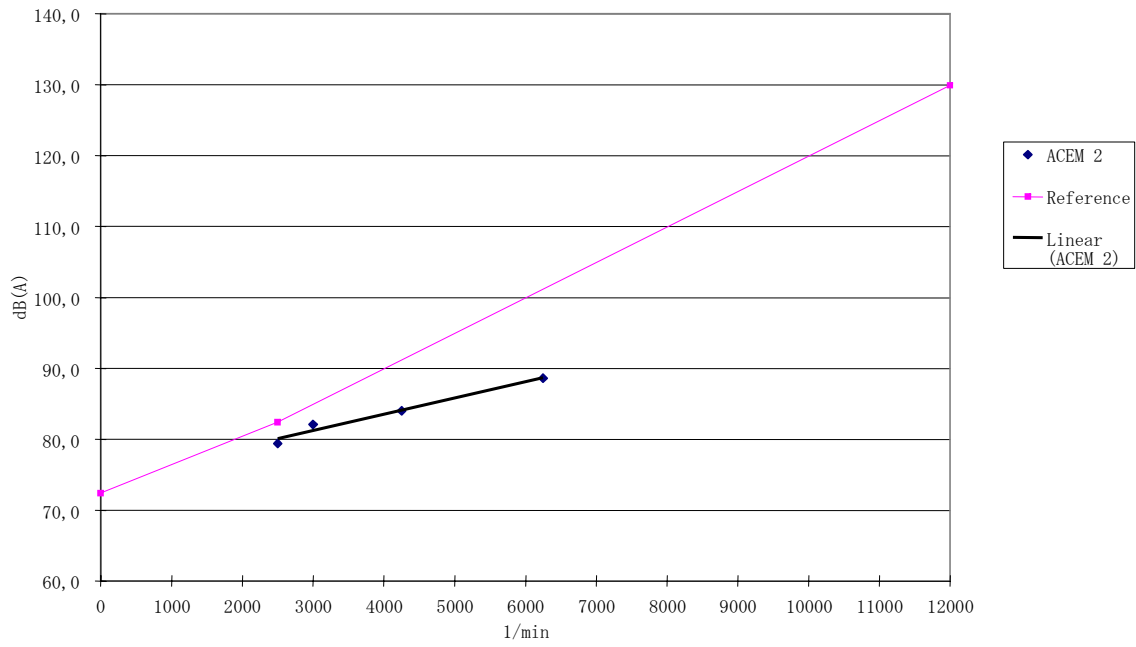


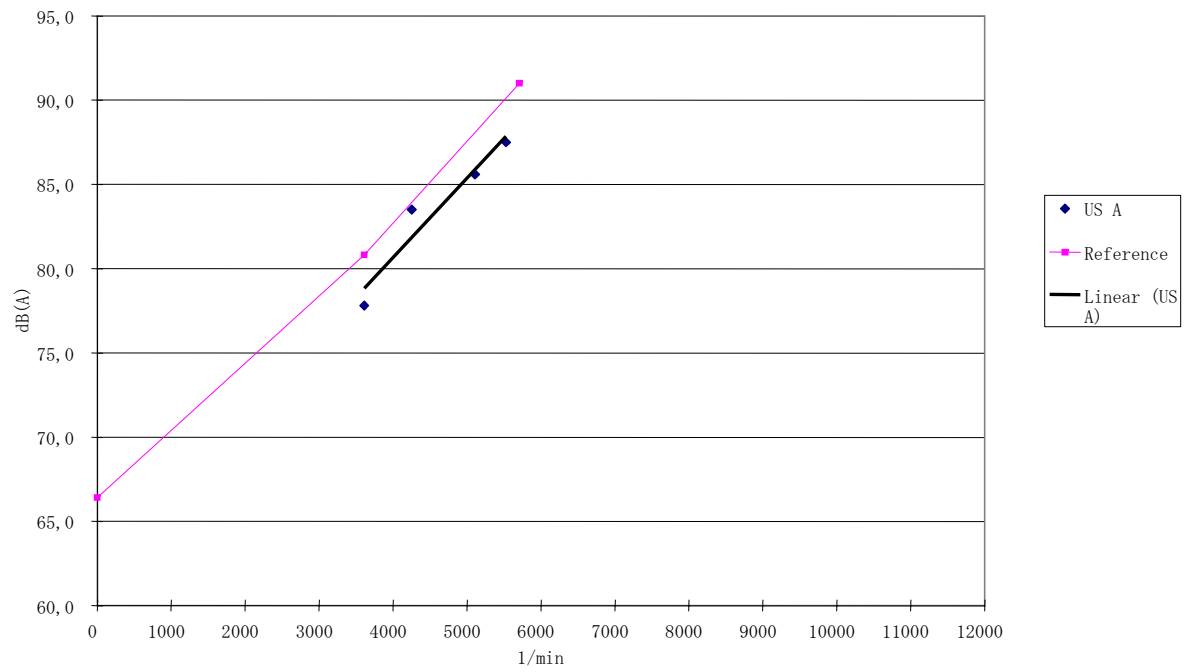
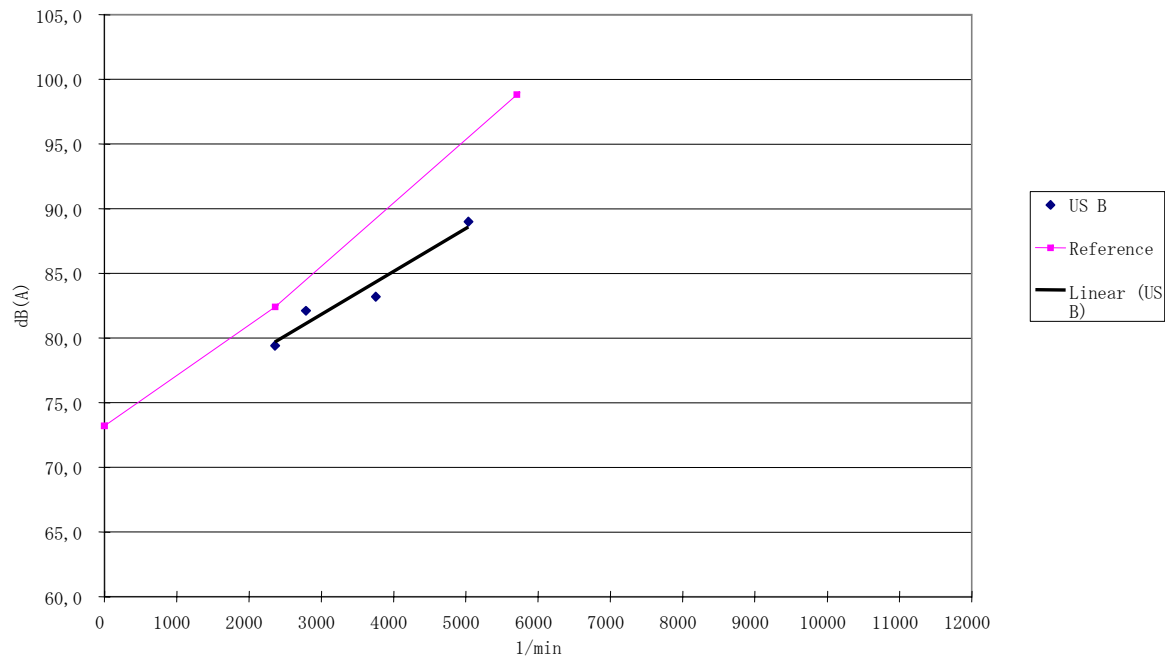
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 ASEP graphs for Japanese motorcycles include data for 4th gear testing as per Japanese noise legislation.

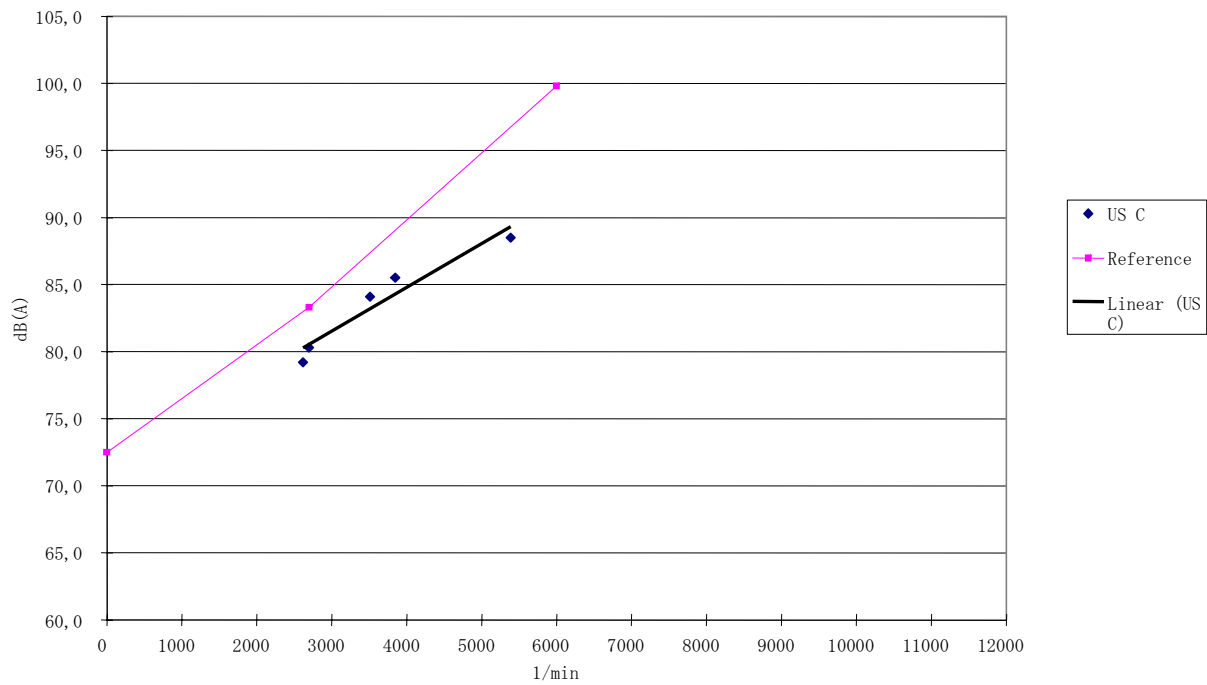


Note
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Overall comments and conclusions (interim)

Analysis of consolidated noise database confirms that:

- ISO362-2 does not appear to be correlated to any vehicle parameter
- ECE R41 and ISO362-2 are not correlated
- "standstill" limit(s) will require the noise output of certain vehicles to be reduced
- limit reduction beyond the standstill values will have to consider cost impact and effectiveness

Proposed ASEP test concept appears workable but requires further consideration of the following items, to ensure its practical application:

- definition of appropriate slope and tolerance (both should ideally be defined in relation to undesirable / irrational / atypical noise emissions behaviour)
- gear dependence of slope requires further investigation
- exclusion of CVT scooters (engine speeds are already high regardless of test procedure)
- deletion of lower ASEP curve (or reformatting of ASEP curve) as not being necessary for motorcycles
- limitation of number of ASEP measurement points
- ASEP compliance is declared during type approval