



To	Optima International LLC	Our ref.	E&I/OAL/TN/AR01A
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Subject: Optima International LLC – Acoustical Louver Sound Attenuation Test

Test Conditions

On October 16, 2007, E&I Emirates measured the sound attenuation performance of an acoustical louver manufactured in Dubai, UAE, by Optima International. The model number of the sample louver measured was as follows:

Optima International OS-ALD1

The sample louver tested had dimensions of 1.0 m width x 1.0 m height x 300 mm depth. It consisted of 100 mm thick baffles, spaced 150 mm centre-to-centre, separated by 50 mm airways. The baffles had glass fibre insulation cores faced on both sides with perforated metal.

Test Method

Testing took place at the Optima International factory in Dubai, UAE. The configuration consisted of a source room, where a loudspeaker was set up to generate a diffuse sound field, acoustically connected to a large open warehouse through a 1.0 m x 1.0 m aperture. No significant flanking transmission paths were noted.

The principle of the test was to measure the near-field sound pressure level on the warehouse side of the aperture, with and without the louver mounted. The measurements consisted of 60 s Leq spacially averaged over a square 1.0 m x 1.0 m plane, 1.0 m away from the aperture.

The measurements were taken with a HP 3569A frequency analyzer, ACO Pacific preamplifier, and Bruel & Kjaer microphone. This instrumentation is certified to ANSI and IEC Type 1.

With all other conditions held constant, the difference between the measurements taken with and without the louver mounted represents the louver sound attenuation performance. We believe that this type of comparison test has similar accuracy to laboratory test methods (e.g. ASTM E90 or ISO 130) in which receiver room effects are compensated for by calculation.

Results

Please refer to Table 1, which lists the octave-band louver sound attenuation measured according to the method described above. Larger numbers indicated better attenuation performance. For comparison, the sound attenuation data published in the Optima International catalogue is also shown. Please note that the measured performance meets the published data in all octave bands.

Table 1: Measured and Published Louver Sound Attenuation (Optima International OS-ALD1)


	Frequency (Hz)							
	63	125	250	500	1000	2000	4000	8000
Measured Attenuation (dB)	6	7	10	15	20	23	21	22
Published Attenuation (dB)	2	5	6	12	18	21	16	16

Conclusion

We trust that you will find this report helpful. Please do not hesitate to contact us if you have any questions or if you require any additional information.

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EMIRATES ELECTRICAL & INSTRUMENTATION CO. (Manag – Pento – ELCOM) LLC


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