



CITTÀ DI TORINO
PROVINCIA DI TORINO

PROGETTO DI
RISTRUTTURAZIONE "EX SUCCURSALE FIAT"
C.so Bramante 15/17, 10100 TORINO

PERMESSO DI COSTRUIRE IN DEROGA L.106/2011

PROGETTO DELLE OPERE DI VIABILITÀ

DESCRIZIONE

TAVOLA N.

RELAZIONE DI CARATTERIZZAZIONE ACUSTICA

PV.A5

03/11/2017

SCALA

DATA

REV	DATA	DESCRIZIONE	ELABORATO	PROGETTATO
0	03/11/2017	EMISSIONE	ROVA	CURTI

PROMOSSO DA:

NOCELLARA S.R.L.

Galleria dei Longobardi 2 - 20121 MILANO
Firma arch. Stefano Seito in delega



STUDIO ARCH. VINCENZO CURTI

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Rapporto delle misure eseguite in data 06 e 07 giugno 2016 a Torino



**IL TECNICO IN ACUSTICA
AMBIENTALE**

P.G. 106416/2008

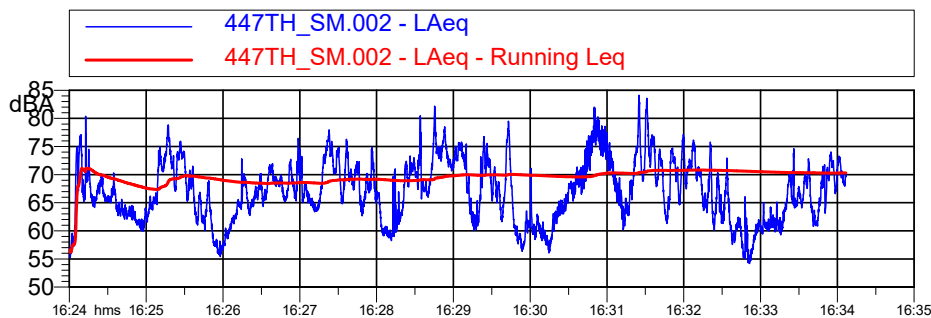
Provincia di Ferrara

Dott. Marco Pavan

Rilievo Fonometrico S1

Data, ora misura: 06/06/2016 16:24:45

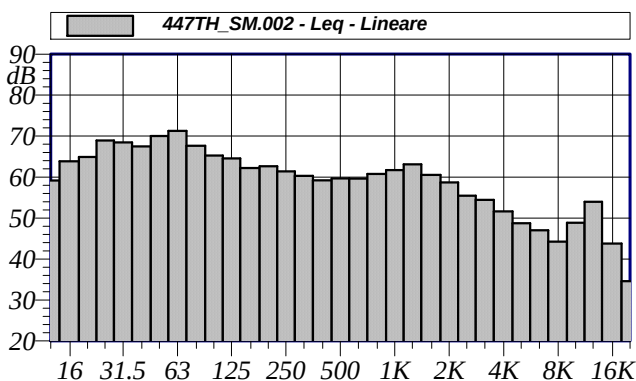
Misura effettuata su Corso Turati a 4 m di altezza dal pavimento sulla banchina spartitraffico di separazione con la retrostante strada del Carrefour. Punto distante a 2 m dal bordo carreggiata di via Turati. I semafori presenti generano code. Durante la misura sono transitati 118 mezzi leggeri e 2 pesanti su via Turati e 50 leggeri sulla strada del Carrefour. Le velocità di transito sono di 50 km/h circa. Il passaggio a livello disturba soprattutto di notte.



$L_{Aeq} = 70.3$ dBA

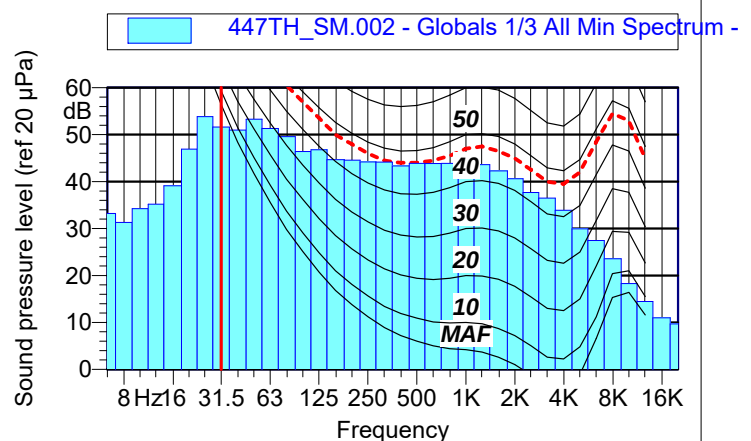
L1: 79.1 dBA L5: 75.8 dBA
L10: 74.1 dBA L50: 66.9 dBA
L90: 60.0 dBA L95: 58.5 dBA

Analisi Spettro in frequenza 1/3 ottava



447TH_SM.002 Leq - Lineare					
dB		dB		dB	
12.5 Hz	59.1 dB	16 Hz	63.8 dB	20 Hz	64.9 dB
25 Hz	68.9 dB	31.5 Hz	68.5 dB	40 Hz	67.5 dB
50 Hz	70.0 dB	63 Hz	71.3 dB	80 Hz	67.7 dB
100 Hz	65.2 dB	125 Hz	64.6 dB	160 Hz	62.2 dB
200 Hz	62.6 dB	250 Hz	61.4 dB	315 Hz	60.3 dB
400 Hz	59.2 dB	500 Hz	59.7 dB	630 Hz	59.6 dB
800 Hz	60.8 dB	1000 Hz	61.7 dB	1250 Hz	63.1 dB
1600 Hz	60.5 dB	2000 Hz	58.7 dB	2500 Hz	55.4 dB
3150 Hz	54.4 dB	4000 Hz	51.6 dB	5000 Hz	48.7 dB
6300 Hz	47.0 dB	8000 Hz	44.2 dB	10000 Hz	48.8 dB
12500 Hz	53.9 dB	16000 Hz	43.8 dB	20000 Hz	34.6 dB

Analisi Ricerca Toni Puri

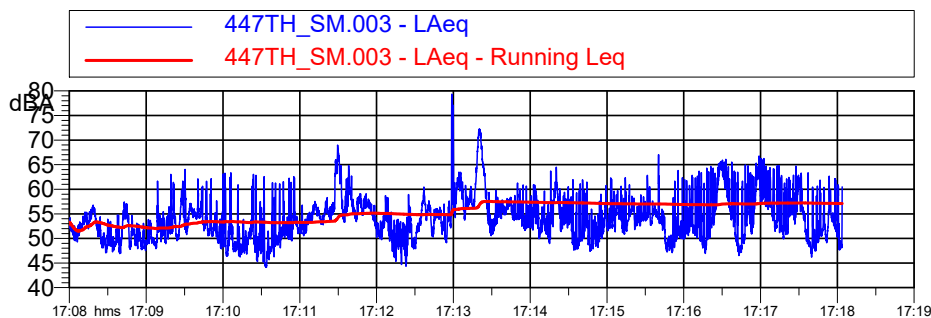


447TH_SM.002 Globals 1/3 All Min Spectrum -					
Hz	dB	Hz	dB	Hz	dB
12.5 Hz	35.2 dBA	16 Hz	39.1 dBA	20 Hz	46.9 dBA
25 Hz	53.8 dBA	31.5 Hz	51.6 dBA	40 Hz	51.0 dBA
50 Hz	53.3 dBA	63 Hz	51.3 dBA	80 Hz	49.5 dBA
100 Hz	46.4 dBA	125 Hz	46.8 dBA	160 Hz	44.6 dBA
200 Hz	44.6 dBA	250 Hz	44.2 dBA	315 Hz	44.2 dBA
400 Hz	43.3 dBA	500 Hz	43.9 dBA	630 Hz	43.9 dBA
800 Hz	43.9 dBA	1000 Hz	44.0 dBA	1250 Hz	43.6 dBA
1600 Hz	42.3 dBA	2000 Hz	40.6 dBA	2500 Hz	37.7 dBA
3150 Hz	36.5 dBA	4000 Hz	33.9 dBA	5000 Hz	29.9 dBA
6300 Hz	27.5 dBA	8000 Hz	23.5 dBA	10000 Hz	18.3 dBA
12500 Hz	14.4 dBA	16000 Hz	11.0 dBA	20000 Hz	9.7 dBA

Rilievo Fonometrico S2

Data, ora misura: 06/06/2016 17:08:18

Misura effettuata su via Forlanini a 4 m di altezza dal pavimento sul bordo del marciapiede a 5 m dal centro carreggiata. Durante la misura sono transitati 2 mezzi leggeri.
Strada a senso unico.



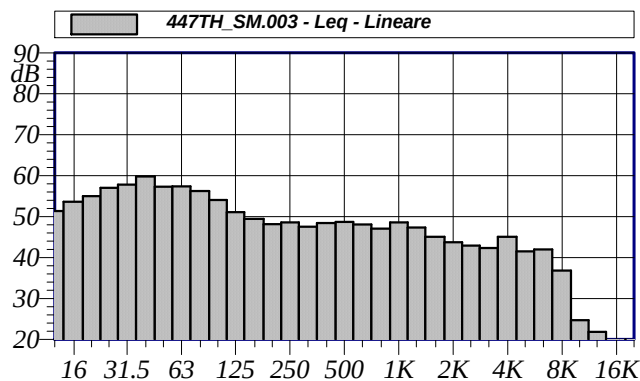
$L_{Aeq} = 57.1$ dBA

L1: 66.3 dBA L5: 62.2 dBA

L10: 59.6 dBA L50: 53.6 dBA

L90: 48.9 dBA L95: 48.1 dBA

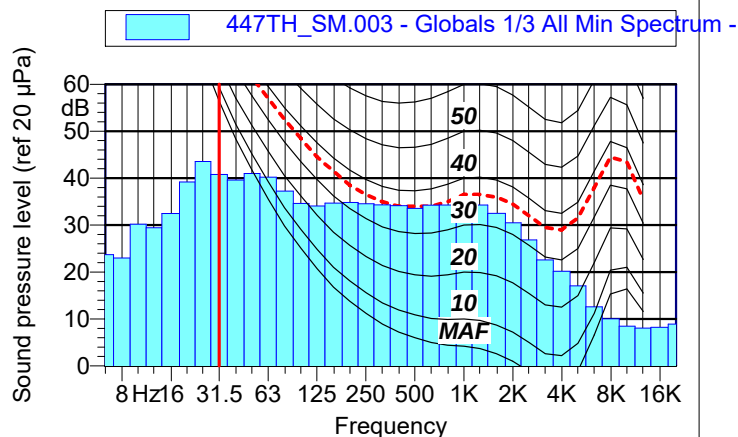
Analisi Spettro in frequenza 1/3 ottava



447TH_SM.003
Leq - Lineare

Hz	dB	Hz	dB	Hz	dB
12.5 Hz	51.4 dB	16 Hz	53.6 dB	20 Hz	55.0 dB
25 Hz	57.0 dB	31.5 Hz	57.8 dB	40 Hz	59.8 dB
50 Hz	57.3 dB	63 Hz	57.4 dB	80 Hz	56.2 dB
100 Hz	54.1 dB	125 Hz	51.1 dB	160 Hz	49.4 dB
200 Hz	48.1 dB	250 Hz	48.6 dB	315 Hz	47.5 dB
400 Hz	48.5 dB	500 Hz	48.7 dB	630 Hz	48.1 dB
800 Hz	47.0 dB	1000 Hz	48.6 dB	1250 Hz	47.3 dB
1600 Hz	45.1 dB	2000 Hz	43.7 dB	2500 Hz	42.9 dB
3150 Hz	42.3 dB	4000 Hz	45.0 dB	5000 Hz	41.5 dB
6300 Hz	42.0 dB	8000 Hz	36.8 dB	10000 Hz	24.7 dB
12500 Hz	21.9 dB	16000 Hz	17.2 dB	20000 Hz	12.9 dB

Analisi Ricerca Toni Puri



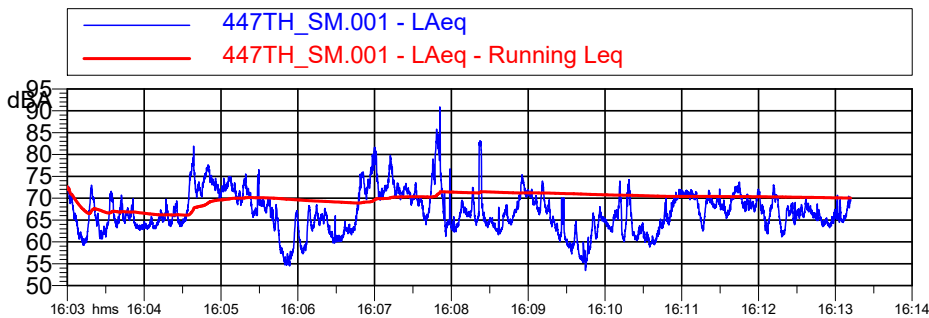
447TH_SM.003
Globals 1/3 All Min Spectrum -

Hz	dB	Hz	dB	Hz	dB
12.5 Hz	29.4 dBA	16 Hz	32.5 dBA	20 Hz	39.2 dBA
25 Hz	43.5 dBA	31.5 Hz	40.8 dBA	40 Hz	39.6 dBA
50 Hz	41.0 dBA	63 Hz	40.2 dBA	80 Hz	37.2 dBA
100 Hz	34.6 dBA	125 Hz	34.1 dBA	160 Hz	34.7 dBA
200 Hz	34.8 dBA	250 Hz	34.5 dBA	315 Hz	34.3 dBA
400 Hz	34.1 dBA	500 Hz	33.6 dBA	630 Hz	34.2 dBA
800 Hz	34.3 dBA	1000 Hz	35.0 dBA	1250 Hz	34.3 dBA
1600 Hz	32.5 dBA	2000 Hz	30.5 dBA	2500 Hz	26.8 dBA
3150 Hz	22.6 dBA	4000 Hz	20.1 dBA	5000 Hz	17.0 dBA
6300 Hz	12.6 dBA	8000 Hz	10.0 dBA	10000 Hz	8.5 dBA
12500 Hz	8.1 dBA	16000 Hz	8.2 dBA	20000 Hz	8.9 dBA

Rilievo Fonometrico S3

Data, ora misura: 06/06/2016 16:03:37

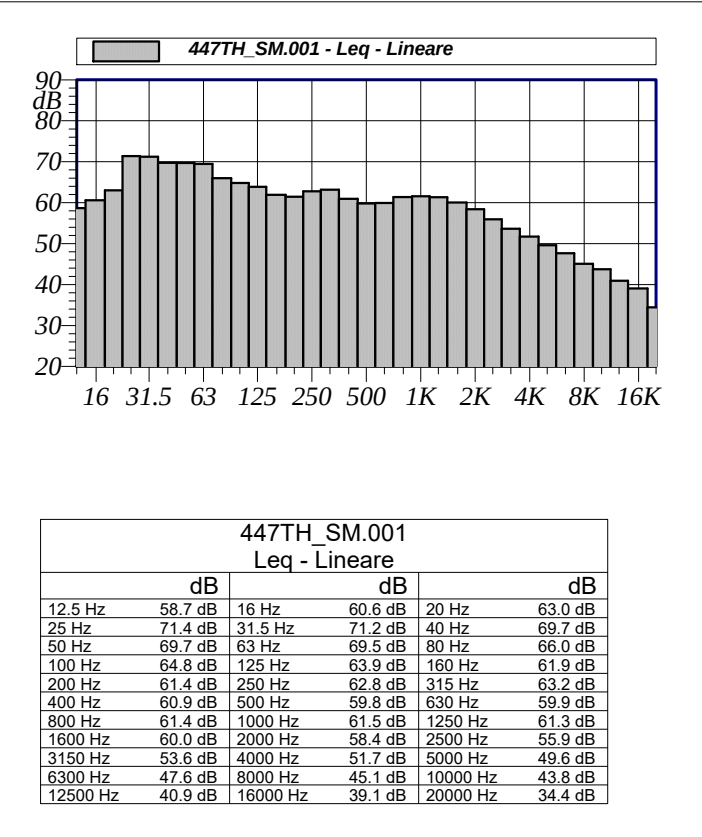
Misura effettuata su Corso Bramante a 4 m di altezza dal pavimento ed a 2 m dal bordo carreggiata. Durante la misura sono transitati 298 mezzi leggeri e 3 pesanti. Il traffico è circolato sulle 4 corsie di Corso Bramante. Le velocità di transito sono di 50 km/h circa. Il semaforo genera code anche sui due controviali.



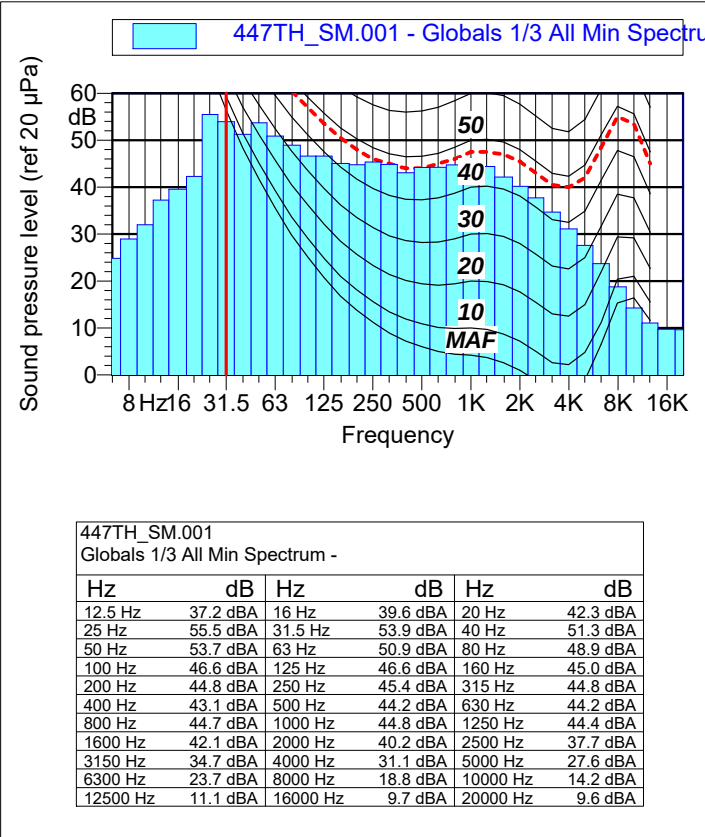
$L_{Aeq} = 70.0 \text{ dBA}$

- L1: 80.3 dBA L5: 74.5 dBA
L10: 72.6 dBA L50: 66.5 dBA
L90: 61.1 dBA L95: 59.4 dBA

Analisi Spettro in frequenza 1/3 ottava



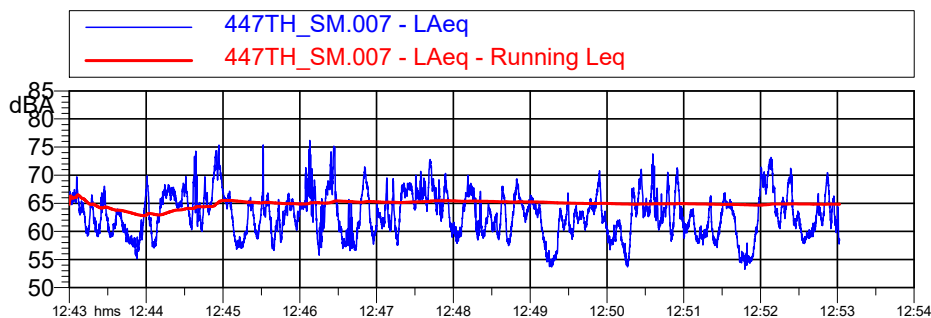
Analisi Ricerca Toni Puri



Rilievo Fonometrico S4

Data, ora misura: 07/06/2016 12:43:50

Misura effettuata su via Giordano Bruno a 4 m di altezza dal pavimento ed a 6 m dal centro carreggiata. Durante la misura sono transitati 132 mezzi leggeri e 2 pesanti.



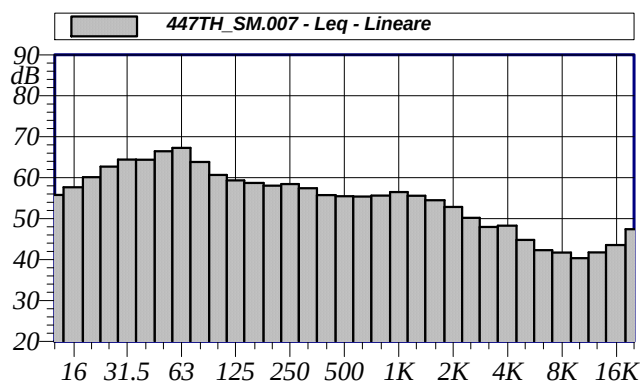
L_{Aeq} = 64.8 dBA

L1: 72.5 dBA L5: 69.4 dBA

L10: 68.0 dBA L50: 63.0 dBA

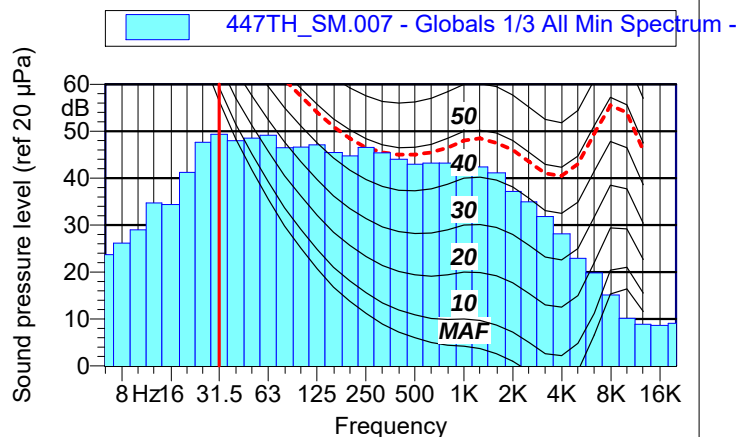
L90: 58.1 dBA L95: 57.0 dBA

Analisi Spettro in frequenza 1/3 ottava



447TH_SM.007 Leq - Lineare					
dB		dB		dB	
12.5 Hz	55.8 dB	16 Hz	57.6 dB	20 Hz	60.1 dB
25 Hz	62.7 dB	31.5 Hz	64.4 dB	40 Hz	64.4 dB
50 Hz	66.4 dB	63 Hz	67.3 dB	80 Hz	63.8 dB
100 Hz	60.7 dB	125 Hz	59.3 dB	160 Hz	58.7 dB
200 Hz	58.0 dB	250 Hz	58.4 dB	315 Hz	57.4 dB
400 Hz	55.7 dB	500 Hz	55.5 dB	630 Hz	55.4 dB
800 Hz	55.6 dB	1000 Hz	56.5 dB	1250 Hz	55.6 dB
1600 Hz	54.5 dB	2000 Hz	52.9 dB	2500 Hz	50.2 dB
3150 Hz	48.0 dB	4000 Hz	48.3 dB	5000 Hz	44.8 dB
6300 Hz	42.3 dB	8000 Hz	41.7 dB	10000 Hz	40.3 dB
12500 Hz	41.8 dB	16000 Hz	43.5 dB	20000 Hz	47.4 dB

Analisi Ricerca Toni Puri

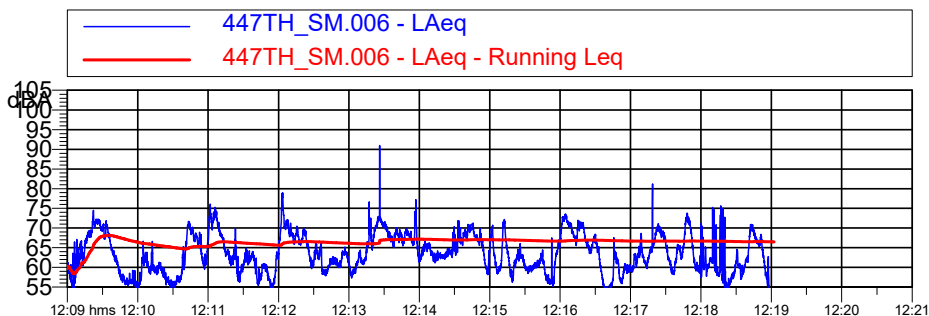
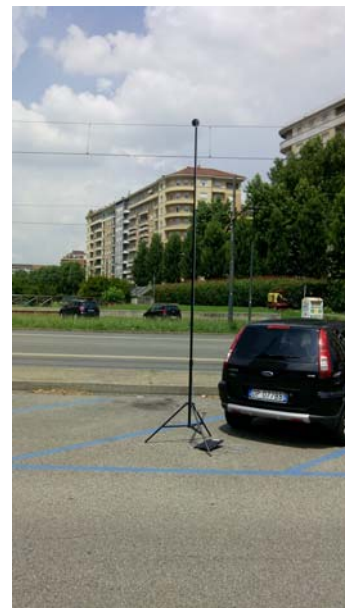


447TH_SM.007 Globals 1/3 All Min Spectrum -					
Hz	dB	Hz	dB	Hz	dB
12.5 Hz	34.7 dBA	16 Hz	34.4 dBA	20 Hz	41.2 dBA
25 Hz	47.6 dBA	31.5 Hz	49.3 dBA	40 Hz	48.0 dBA
50 Hz	48.5 dBA	63 Hz	49.1 dBA	80 Hz	46.5 dBA
100 Hz	46.6 dBA	125 Hz	47.1 dBA	160 Hz	45.5 dBA
200 Hz	44.7 dBA	250 Hz	46.5 dBA	315 Hz	45.4 dBA
400 Hz	44.0 dBA	500 Hz	43.0 dBA	630 Hz	43.2 dBA
800 Hz	43.2 dBA	1000 Hz	43.8 dBA	1250 Hz	42.4 dBA
1600 Hz	41.1 dBA	2000 Hz	37.2 dBA	2500 Hz	34.9 dBA
3150 Hz	31.8 dBA	4000 Hz	28.1 dBA	5000 Hz	22.9 dBA
6300 Hz	19.8 dBA	8000 Hz	15.1 dBA	10000 Hz	10.1 dBA
12500 Hz	8.9 dBA	16000 Hz	8.7 dBA	20000 Hz	9.1 dBA

Rilievo Fonometrico S5

Data, ora misura: 07/06/2016 12:09:53

Misura effettuata su Corso Re Umberto a 4 m di altezza dal pavimento ed a 11.5 m dal centro carreggiata. Durante la misura sono transitati 147 mezzi leggeri e 3 pesanti. Tra i marciapiedi e le carreggiate sono presenti, ai due lati della strada, le corsie dei Taxi/Filobus larghe 3 metri.



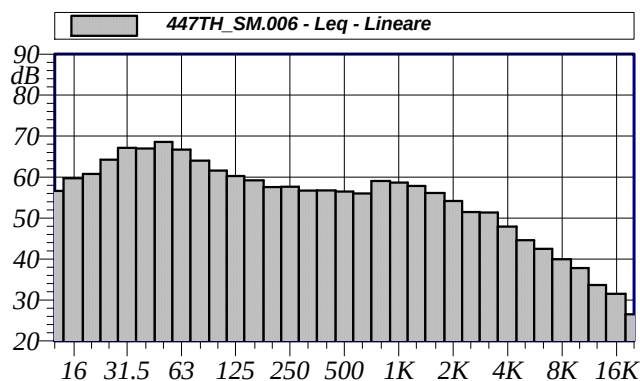
$L_{Aeq} = 66.5$ dBA

L1: 73.6 dBA L5: 71.4 dBA

L10: 70.3 dBA L50: 62.9 dBA

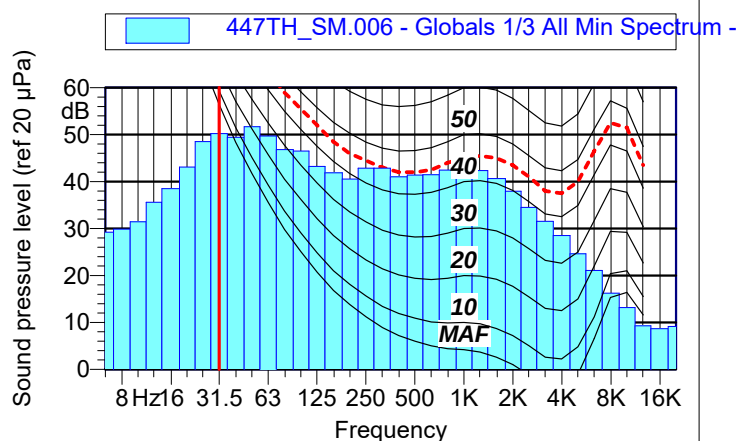
L90: 57.0 dBA L95: 55.9 dBA

Analisi Spettro in frequenza 1/3 ottava



447TH_SM.006 Leq - Lineare					
dB		dB		dB	
12.5 Hz	56.6 dB	16 Hz	59.7 dB	20 Hz	60.8 dB
25 Hz	64.3 dB	31.5 Hz	67.1 dB	40 Hz	67.0 dB
50 Hz	68.6 dB	63 Hz	66.7 dB	80 Hz	64.0 dB
100 Hz	61.6 dB	125 Hz	60.3 dB	160 Hz	59.2 dB
200 Hz	57.6 dB	250 Hz	57.6 dB	315 Hz	56.7 dB
400 Hz	56.8 dB	500 Hz	56.5 dB	630 Hz	56.0 dB
800 Hz	59.0 dB	1000 Hz	58.7 dB	1250 Hz	57.8 dB
1600 Hz	56.1 dB	2000 Hz	54.2 dB	2500 Hz	51.5 dB
3150 Hz	51.4 dB	4000 Hz	47.9 dB	5000 Hz	44.6 dB
6300 Hz	42.5 dB	8000 Hz	39.9 dB	10000 Hz	37.8 dB
12500 Hz	33.6 dB	16000 Hz	31.5 dB	20000 Hz	26.5 dB

Analisi Ricerca Toni Puri

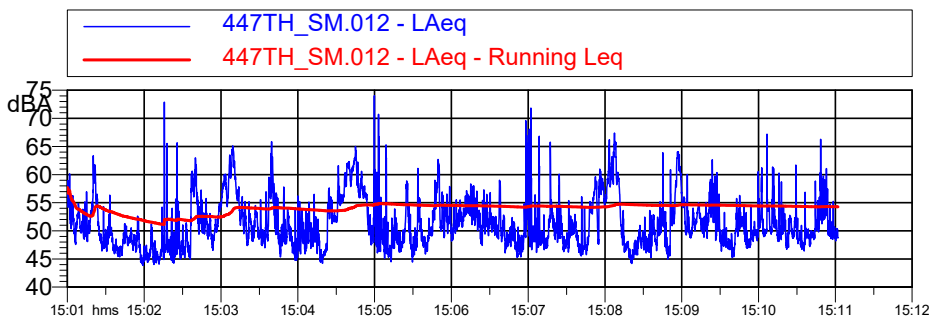


447TH_SM.006 Globals 1/3 All Min Spectrum -					
Hz	dB	Hz	dB	Hz	dB
12.5 Hz	35.6 dBA	16 Hz	38.5 dBA	20 Hz	43.1 dBA
25 Hz	48.5 dBA	31.5 Hz	50.2 dBA	40 Hz	49.4 dBA
50 Hz	51.7 dBA	63 Hz	49.7 dBA	80 Hz	46.8 dBA
100 Hz	46.5 dBA	125 Hz	43.2 dBA	160 Hz	41.8 dBA
200 Hz	40.5 dBA	250 Hz	42.9 dBA	315 Hz	42.9 dBA
400 Hz	41.0 dBA	500 Hz	41.4 dBA	630 Hz	41.5 dBA
800 Hz	42.4 dBA	1000 Hz	43.6 dBA	1250 Hz	42.3 dBA
1600 Hz	40.6 dBA	2000 Hz	38.0 dBA	2500 Hz	34.5 dBA
3150 Hz	31.5 dBA	4000 Hz	28.5 dBA	5000 Hz	24.6 dBA
6300 Hz	21.1 dBA	8000 Hz	16.2 dBA	10000 Hz	13.1 dBA
12500 Hz	9.3 dBA	16000 Hz	8.7 dBA	20000 Hz	9.1 dBA

Rilievo Fonometrico S6

Data, ora misura: 07/06/2016 15:01:18

Misura effettuata su via Ardigò a 4 m di altezza dal pavimento ed a 4 m dal centro carreggiata a 2 m dalla facciata dell'edificio. Durante la misura sono transitati 10 mezzi leggeri.



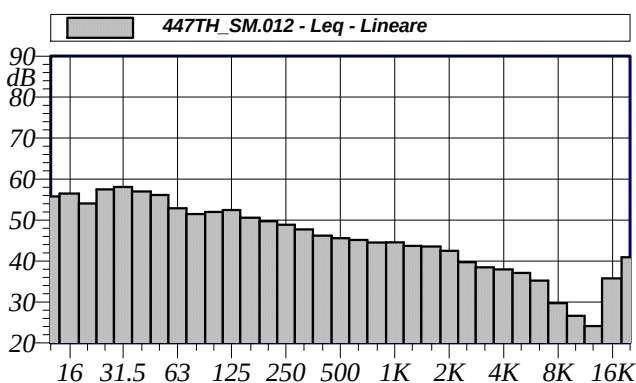
$L_{Aeq} = 54.3$ dBA

L1: 64.0 dBA L5: 60.0 dBA

L10: 57.8 dBA L50: 50.3 dBA

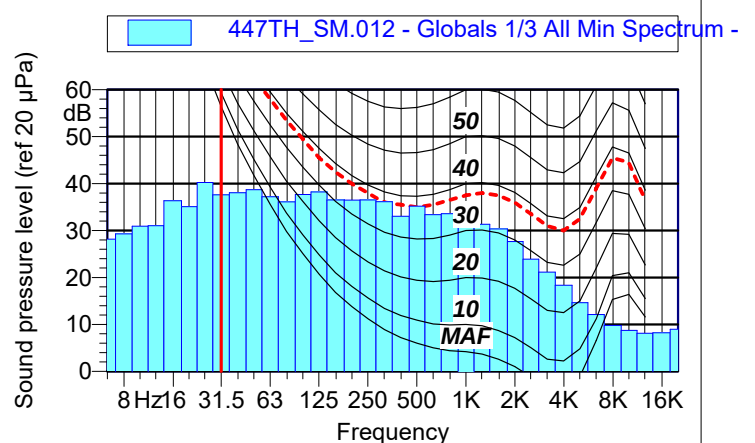
L90: 46.6 dBA L95: 45.9 dBA

Analisi Spettro in frequenza 1/3 ottava



447TH_SM.012 Leq - Lineare					
dB		dB		dB	
12.5 Hz	55.7 dB	16 Hz	56.4 dB	20 Hz	54.1 dB
25 Hz	57.5 dB	31.5 Hz	58.1 dB	40 Hz	57.0 dB
50 Hz	56.1 dB	63 Hz	52.9 dB	80 Hz	51.5 dB
100 Hz	52.0 dB	125 Hz	52.4 dB	160 Hz	50.5 dB
200 Hz	49.7 dB	250 Hz	48.8 dB	315 Hz	47.7 dB
400 Hz	46.2 dB	500 Hz	45.6 dB	630 Hz	45.1 dB
800 Hz	44.5 dB	1000 Hz	44.5 dB	1250 Hz	43.7 dB
1600 Hz	43.5 dB	2000 Hz	42.5 dB	2500 Hz	39.7 dB
3150 Hz	38.4 dB	4000 Hz	38.0 dB	5000 Hz	37.1 dB
6300 Hz	35.2 dB	8000 Hz	29.7 dB	10000 Hz	26.6 dB
12500 Hz	24.1 dB	16000 Hz	35.8 dB	20000 Hz	40.9 dB

Analisi Ricerca Toni Puri

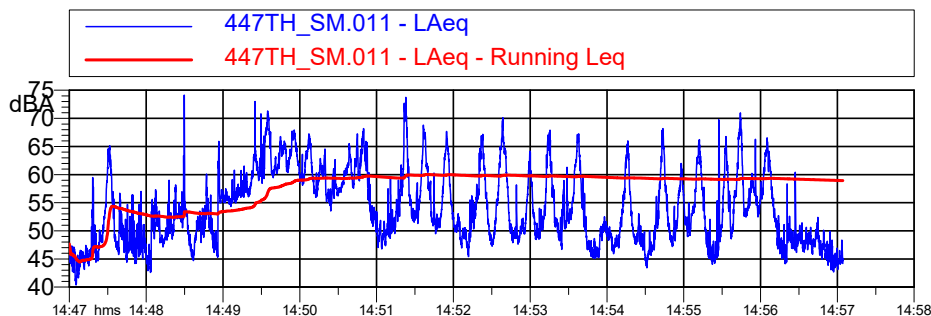


447TH_SM.012 Globals 1/3 All Min Spectrum -					
Hz	dB	Hz	dB	Hz	dB
12.5 Hz	31.0 dBA	16 Hz	36.4 dBA	20 Hz	35.1 dBA
25 Hz	40.2 dBA	31.5 Hz	37.6 dBA	40 Hz	38.1 dBA
50 Hz	38.7 dBA	63 Hz	37.2 dBA	80 Hz	36.1 dBA
100 Hz	37.7 dBA	125 Hz	38.2 dBA	160 Hz	36.5 dBA
200 Hz	36.5 dBA	250 Hz	36.5 dBA	315 Hz	36.2 dBA
400 Hz	33.0 dBA	500 Hz	35.2 dBA	630 Hz	33.4 dBA
800 Hz	33.6 dBA	1000 Hz	32.4 dBA	1250 Hz	31.3 dBA
1600 Hz	30.4 dBA	2000 Hz	27.7 dBA	2500 Hz	23.9 dBA
3150 Hz	21.2 dBA	4000 Hz	18.3 dBA	5000 Hz	14.6 dBA
6300 Hz	12.1 dBA	8000 Hz	9.8 dBA	10000 Hz	8.7 dBA
12500 Hz	8.1 dBA	16000 Hz	8.2 dBA	20000 Hz	9.0 dBA

Rilievo Fonometrico S7

Data, ora misura: 07/06/2016 14:47:01

Misura effettuata su via Galuppi a 4 m di altezza dal pavimento ed a 8 m dal centro carreggiata a 3 m dalla facciata dell'edificio. Durante la misura sono transitati 31 mezzi leggeri.



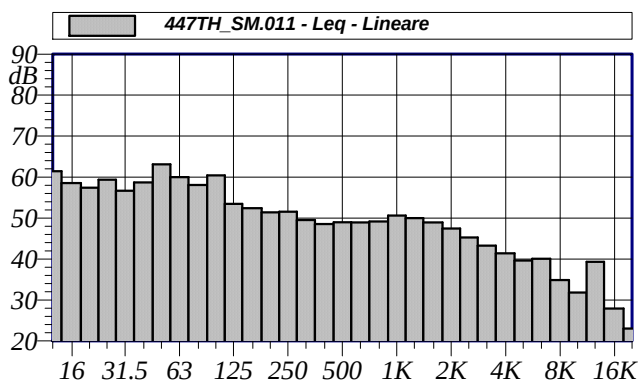
$L_{Aeq} = 58.9 \text{ dBA}$

L1: 68.4 dBA L5: 65.5 dBA

L10: 63.5 dBA L50: 52.7 dBA

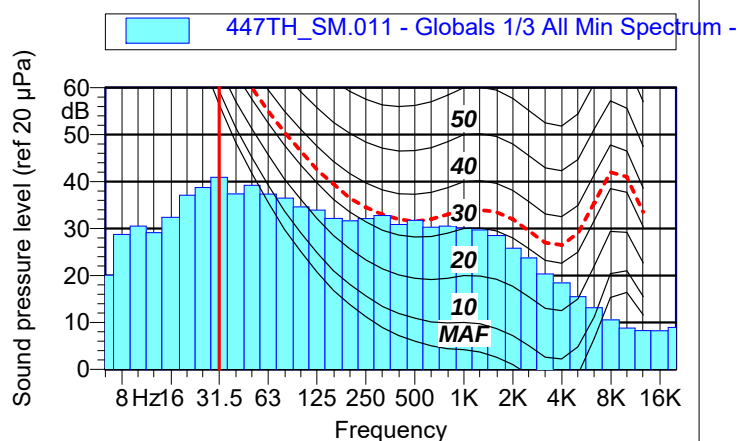
L90: 46.4 dBA L95: 45.3 dBA

Analisi Spettro in frequenza 1/3 ottava



447TH_SM.011 Leq - Lineare					
dB		dB		dB	
12.5 Hz	61.5 dB	16 Hz	58.5 dB	20 Hz	57.4 dB
25 Hz	59.4 dB	31.5 Hz	56.7 dB	40 Hz	58.7 dB
50 Hz	63.1 dB	63 Hz	60.0 dB	80 Hz	58.1 dB
100 Hz	60.4 dB	125 Hz	53.5 dB	160 Hz	52.4 dB
200 Hz	51.4 dB	250 Hz	51.6 dB	315 Hz	49.5 dB
400 Hz	48.5 dB	500 Hz	49.0 dB	630 Hz	48.9 dB
800 Hz	49.1 dB	1000 Hz	50.6 dB	1250 Hz	50.0 dB
1600 Hz	48.9 dB	2000 Hz	47.5 dB	2500 Hz	45.2 dB
3150 Hz	43.3 dB	4000 Hz	41.4 dB	5000 Hz	39.6 dB
6300 Hz	40.1 dB	8000 Hz	34.9 dB	10000 Hz	31.8 dB
12500 Hz	39.3 dB	16000 Hz	27.9 dB	20000 Hz	23.0 dB

Analisi Ricerca Toni Puri

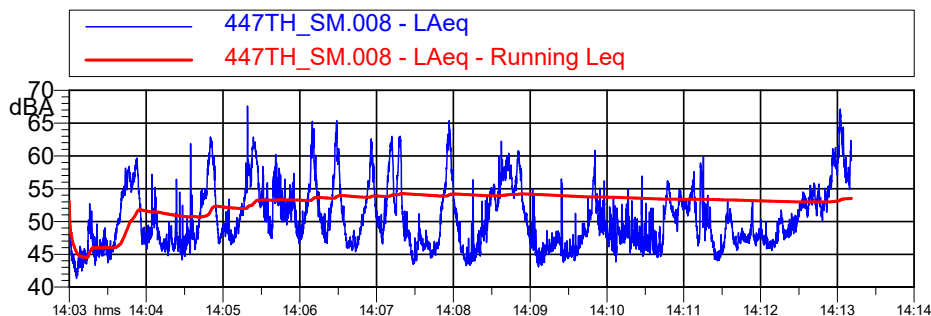


447TH_SM.011 Globals 1/3 All Min Spectrum -					
Hz	dB	Hz	dB	Hz	dB
12.5 Hz	29.1 dBA	16 Hz	32.4 dBA	20 Hz	37.1 dBA
25 Hz	38.7 dBA	31.5 Hz	40.9 dBA	40 Hz	37.4 dBA
50 Hz	39.2 dBA	63 Hz	37.4 dBA	80 Hz	36.5 dBA
100 Hz	34.6 dBA	125 Hz	33.9 dBA	160 Hz	32.2 dBA
200 Hz	31.7 dBA	250 Hz	32.1 dBA	315 Hz	32.8 dBA
400 Hz	30.8 dBA	500 Hz	31.7 dBA	630 Hz	30.3 dBA
800 Hz	30.5 dBA	1000 Hz	30.0 dBA	1250 Hz	29.7 dBA
1600 Hz	28.5 dBA	2000 Hz	25.8 dBA	2500 Hz	23.7 dBA
3150 Hz	20.3 dBA	4000 Hz	18.4 dBA	5000 Hz	15.5 dBA
6300 Hz	13.1 dBA	8000 Hz	10.5 dBA	10000 Hz	8.8 dBA
12500 Hz	8.3 dBA	16000 Hz	8.2 dBA	20000 Hz	8.9 dBA

Rilievo Fonometrico S8

Data, ora misura: 07/06/2016 14:03:40

Misura effettuata su via Steffenone a 4 m di altezza dal pavimento ed a 5 m dal centro carreggiata. Durante la misura sono transitati 14 mezzi leggeri.



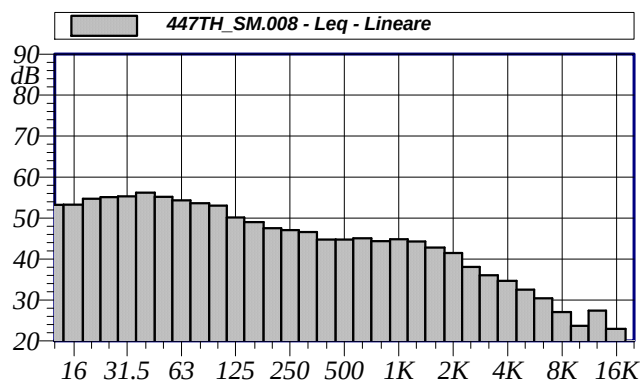
$L_{Aeq} = 53.5$ dBA

L1: 62.7 dBA L5: 59.6 dBA

L10: 57.4 dBA L50: 49.2 dBA

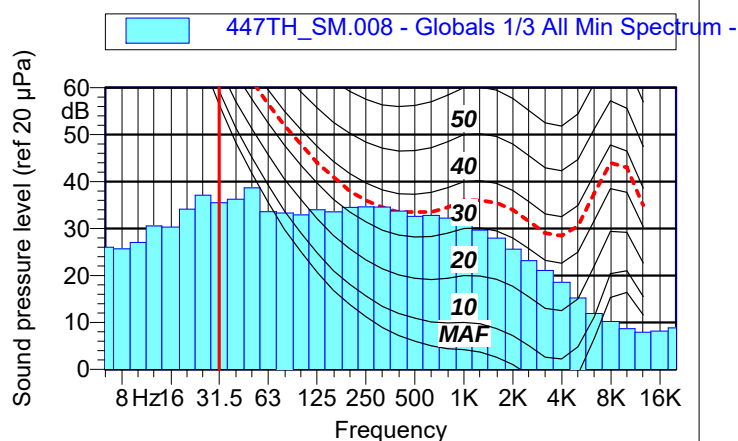
L90: 45.4 dBA L95: 44.7 dBA

Analisi Spettro in frequenza 1/3 ottava



447TH_SM.008					
Leq - Lineare					
dB		dB		dB	
12.5 Hz	53.2 dB	16 Hz	53.2 dB	20 Hz	54.7 dB
25 Hz	55.1 dB	31.5 Hz	55.3 dB	40 Hz	56.2 dB
50 Hz	55.2 dB	63 Hz	54.3 dB	80 Hz	53.6 dB
100 Hz	53.0 dB	125 Hz	50.1 dB	160 Hz	49.0 dB
200 Hz	47.5 dB	250 Hz	47.0 dB	315 Hz	46.6 dB
400 Hz	44.8 dB	500 Hz	44.8 dB	630 Hz	45.1 dB
800 Hz	44.3 dB	1000 Hz	44.8 dB	1250 Hz	44.3 dB
1600 Hz	42.8 dB	2000 Hz	41.5 dB	2500 Hz	38.1 dB
3150 Hz	36.1 dB	4000 Hz	34.7 dB	5000 Hz	32.6 dB
6300 Hz	30.4 dB	8000 Hz	27.0 dB	10000 Hz	23.7 dB
12500 Hz	27.4 dB	16000 Hz	22.9 dB	20000 Hz	15.2 dB

Analisi Ricerca Toni Puri

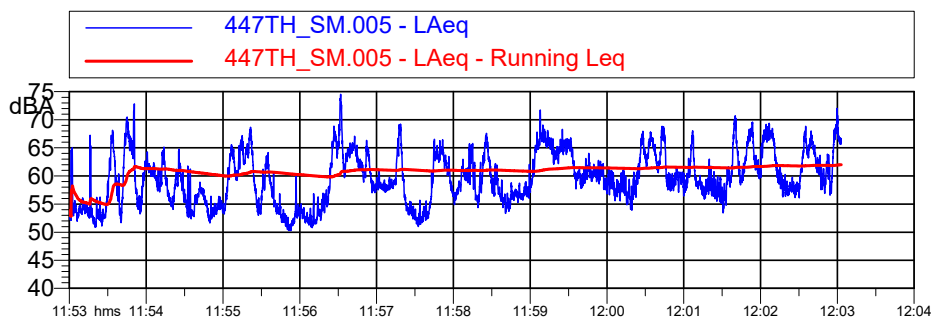
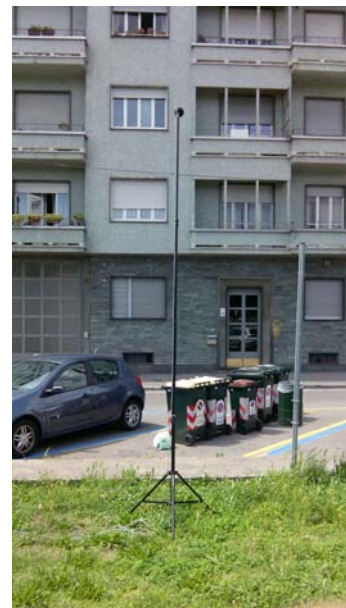


447TH_SM.008 Globals 1/3 All Min Spectrum -					
Hz	dB	Hz	dB	Hz	dB
12.5 Hz	30.6 dBA	16 Hz	30.3 dBA	20 Hz	34.1 dBA
25 Hz	37.1 dBA	31.5 Hz	35.5 dBA	40 Hz	36.2 dBA
50 Hz	38.7 dBA	63 Hz	33.6 dBA	80 Hz	33.3 dBA
100 Hz	32.9 dBA	125 Hz	34.0 dBA	160 Hz	33.6 dBA
200 Hz	34.5 dBA	250 Hz	34.6 dBA	315 Hz	34.6 dBA
400 Hz	33.7 dBA	500 Hz	32.6 dBA	630 Hz	32.8 dBA
800 Hz	32.2 dBA	1000 Hz	31.6 dBA	1250 Hz	29.6 dBA
1600 Hz	28.0 dBA	2000 Hz	25.6 dBA	2500 Hz	23.1 dBA
3150 Hz	21.1 dBA	4000 Hz	18.5 dBA	5000 Hz	15.2 dBA
6300 Hz	11.9 dBA	8000 Hz	10.2 dBA	10000 Hz	8.6 dBA
12500 Hz	7.9 dBA	16000 Hz	8.2 dBA	20000 Hz	8.8 dBA

Rilievo Fonometrico S9

Data, ora misura: 07/06/2016 11:53:00

Misura effettuata su via Tirreno a 4 m di altezza dal pavimento ed a 6 m dal bordo carreggiata. Strada a senso univo verso via Turati con parcheggi di fronte. Si percepisce molto il contributo di Corso Re Umberto. Durante la misura sono transitati 57 mezzi leggeri.



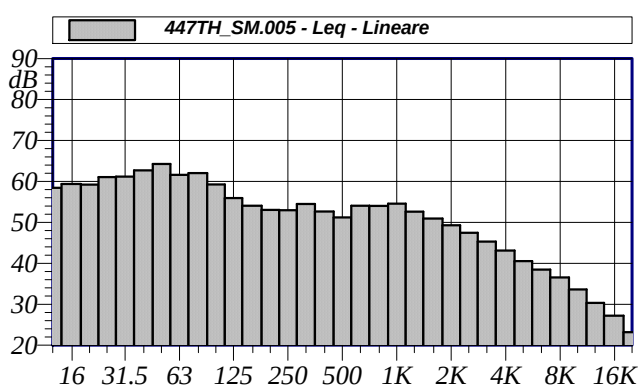
$L_{Aeq} = 62.0$ dBA

L1: 69.2 dBA L5: 67.2 dBA

L10: 66.1 dBA L50: 59.2 dBA

L90: 53.4 dBA L95: 52.6 dBA

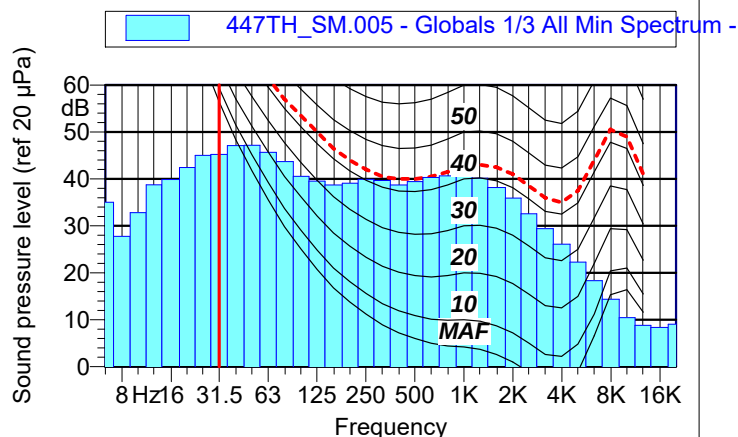
Analisi Spettro in frequenza 1/3 ottava



447TH_SM.005
Leq - Lineare

Hz	dB	Hz	dB	Hz	dB
12.5 Hz	58.4 dB	16 Hz	59.4 dB	20 Hz	59.2 dB
25 Hz	61.0 dB	31.5 Hz	61.2 dB	40 Hz	62.7 dB
50 Hz	64.2 dB	63 Hz	61.6 dB	80 Hz	62.0 dB
100 Hz	59.3 dB	125 Hz	55.9 dB	160 Hz	54.1 dB
200 Hz	53.0 dB	250 Hz	53.0 dB	315 Hz	54.5 dB
400 Hz	52.7 dB	500 Hz	51.2 dB	630 Hz	54.0 dB
800 Hz	54.0 dB	1000 Hz	54.6 dB	1250 Hz	52.6 dB
1600 Hz	50.9 dB	2000 Hz	49.3 dB	2500 Hz	47.5 dB
3150 Hz	45.3 dB	4000 Hz	43.1 dB	5000 Hz	40.5 dB
6300 Hz	38.5 dB	8000 Hz	36.6 dB	10000 Hz	33.6 dB
12500 Hz	30.4 dB	16000 Hz	27.2 dB	20000 Hz	23.2 dB

Analisi Ricerca Toni Puri



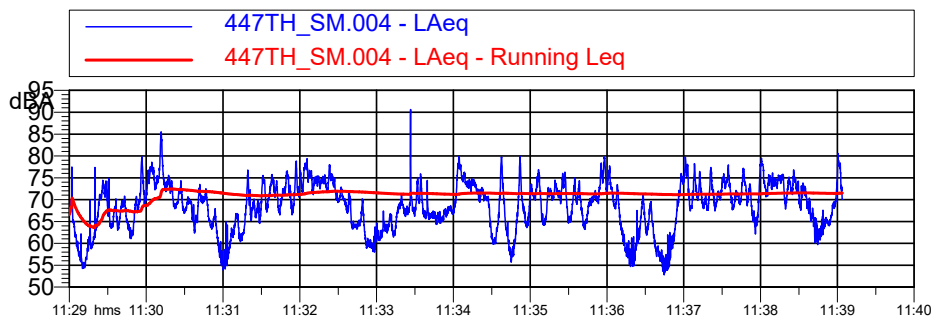
447TH_SM.005
Globals 1/3 All Min Spectrum -

Hz	dB	Hz	dB	Hz	dB
12.5 Hz	38.7 dBA	16 Hz	39.9 dBA	20 Hz	42.4 dBA
25 Hz	45.0 dBA	31.5 Hz	45.2 dBA	40 Hz	47.1 dBA
50 Hz	47.2 dBA	63 Hz	45.7 dBA	80 Hz	43.7 dBA
100 Hz	40.5 dBA	125 Hz	39.5 dBA	160 Hz	38.7 dBA
200 Hz	39.1 dBA	250 Hz	39.9 dBA	315 Hz	39.7 dBA
400 Hz	38.7 dBA	500 Hz	39.4 dBA	630 Hz	40.3 dBA
800 Hz	40.7 dBA	1000 Hz	41.4 dBA	1250 Hz	40.1 dBA
1600 Hz	38.1 dBA	2000 Hz	35.9 dBA	2500 Hz	32.6 dBA
3150 Hz	29.4 dBA	4000 Hz	26.1 dBA	5000 Hz	22.3 dBA
6300 Hz	18.3 dBA	8000 Hz	14.4 dBA	10000 Hz	10.4 dBA
12500 Hz	8.8 dBA	16000 Hz	8.4 dBA	20000 Hz	9.1 dBA

Rilievo Fonometrico S10

Data, ora misura: 07/06/2016 11:29:22

Misura effettuata su Corso Dante Alighieri sul tratto a raso prima del cavalcavia a 4 m di altezza dal pavimento ed a 3 m dal bordo carreggiata. Il traffico sul controviaie è nullo. Durante la misura sono transitati 225 mezzi leggeri ed 1 pesante.



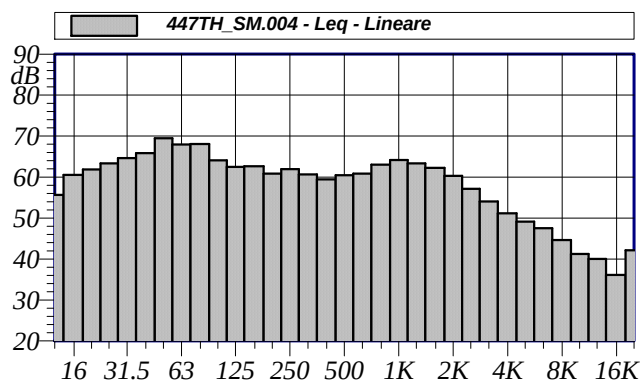
$$L_{Aeq} = 71.5 \text{ dBA}$$

L1: 78.8 dBA L5: 76.3 dBA

L10: 75.0 dBA L50: 69.1 dBA

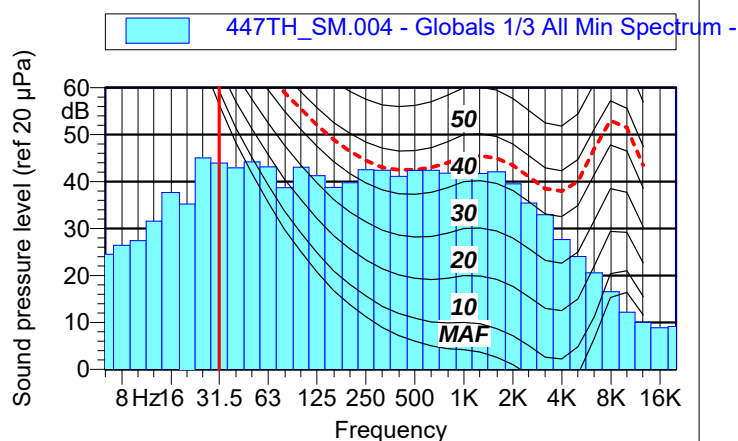
L90: 60.6 dBA L95: 58.1 dBA

Analisi Spettro in frequenza 1/3 ottava



447TH_SM.004 Leq - Lineare					
dB		dB		dB	
12.5 Hz	55.6 dB	16 Hz	60.5 dB	20 Hz	61.8 dB
25 Hz	63.3 dB	31.5 Hz	64.6 dB	40 Hz	65.9 dB
50 Hz	69.5 dB	63 Hz	67.9 dB	80 Hz	68.1 dB
100 Hz	64.1 dB	125 Hz	62.5 dB	160 Hz	62.7 dB
200 Hz	60.8 dB	250 Hz	61.9 dB	315 Hz	60.6 dB
400 Hz	59.4 dB	500 Hz	60.4 dB	630 Hz	60.9 dB
800 Hz	63.0 dB	1000 Hz	64.2 dB	1250 Hz	63.4 dB
1600 Hz	62.2 dB	2000 Hz	60.3 dB	2500 Hz	57.1 dB
3150 Hz	54.1 dB	4000 Hz	51.1 dB	5000 Hz	49.1 dB
6300 Hz	47.5 dB	8000 Hz	44.6 dB	10000 Hz	41.2 dB
12500 Hz	40.0 dB	16000 Hz	36.1 dB	20000 Hz	42.1 dB

Analisi Ricerca Toni Puri

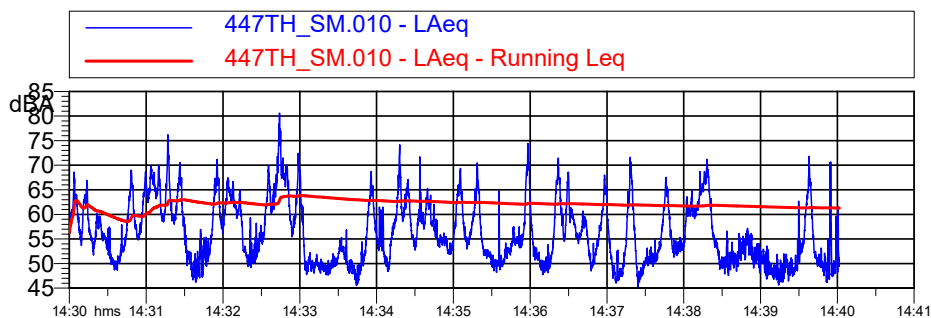


447TH_SM.004 Globals 1/3 All Min Spectrum -					
Hz	dB	Hz	dB	Hz	dB
12.5 Hz	31.6 dBA	16 Hz	37.7 dBA	20 Hz	35.2 dBA
25 Hz	45.0 dBA	31.5 Hz	43.9 dBA	40 Hz	42.9 dBA
50 Hz	44.2 dBA	63 Hz	43.1 dBA	80 Hz	38.7 dBA
100 Hz	43.0 dBA	125 Hz	41.2 dBA	160 Hz	38.8 dBA
200 Hz	39.7 dBA	250 Hz	42.5 dBA	315 Hz	42.4 dBA
400 Hz	41.1 dBA	500 Hz	42.4 dBA	630 Hz	42.4 dBA
800 Hz	41.8 dBA	1000 Hz	43.4 dBA	1250 Hz	41.7 dBA
1600 Hz	42.1 dBA	2000 Hz	39.5 dBA	2500 Hz	35.4 dBA
3150 Hz	32.9 dBA	4000 Hz	27.6 dBA	5000 Hz	24.0 dBA
6300 Hz	20.6 dBA	8000 Hz	16.5 dBA	10000 Hz	12.1 dBA
12500 Hz	10.0 dBA	16000 Hz	8.9 dBA	20000 Hz	9.1 dBA

Rilievo Fonometrico S11

Data, ora misura: 07/06/2016 14:30:31

Misura effettuata su via Tunisi a 4 m di altezza dal pavimento ed a 6 m dal centro carreggiata . Durante la misura sono transitati 42 mezzi leggeri.



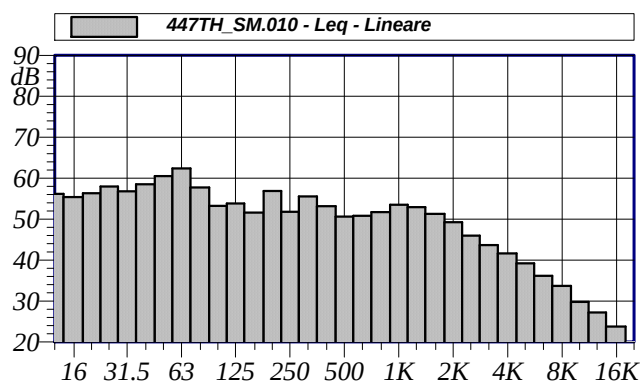
$$L_{Aeq} = 61.3 \text{ dBA}$$

L1: 70.9 dBA L5: 67.5 dBA

L10: 65.4 dBA L50: 54.8 dBA

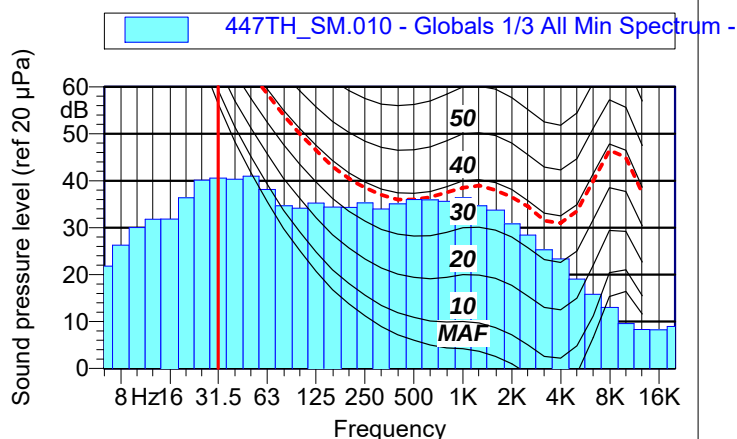
L90: 49.0 dBA L95: 48.1 dBA

Analisi Spettro in frequenza 1/3 ottava



447TH_SM.010 Leq - Lineare					
dB		dB		dB	
12.5 Hz	56.1 dB	16 Hz	55.4 dB	20 Hz	56.4 dB
25 Hz	58.0 dB	31.5 Hz	56.8 dB	40 Hz	58.5 dB
50 Hz	60.5 dB	63 Hz	62.4 dB	80 Hz	57.7 dB
100 Hz	53.2 dB	125 Hz	53.8 dB	160 Hz	51.6 dB
200 Hz	56.9 dB	250 Hz	51.8 dB	315 Hz	55.5 dB
400 Hz	53.2 dB	500 Hz	50.6 dB	630 Hz	50.8 dB
800 Hz	51.7 dB	1000 Hz	53.5 dB	1250 Hz	52.9 dB
1600 Hz	51.3 dB	2000 Hz	49.3 dB	2500 Hz	46.0 dB
3150 Hz	43.7 dB	4000 Hz	41.6 dB	5000 Hz	39.2 dB
6300 Hz	36.2 dB	8000 Hz	33.7 dB	10000 Hz	29.8 dB
12500 Hz	27.2 dB	16000 Hz	23.8 dB	20000 Hz	19.2 dB

Analisi Ricerca Toni Puri

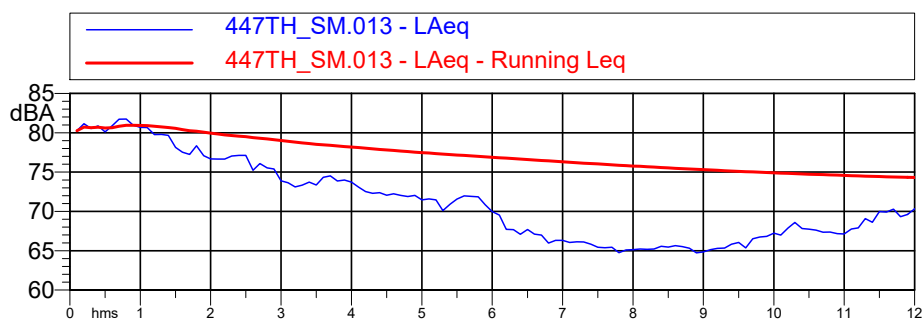


447TH_SM.010 Globals 1/3 All Min Spectrum -					
Hz	dB	Hz	dB	Hz	dB
12.5 Hz	31.8 dBA	16 Hz	31.8 dBA	20 Hz	36.3 dBA
25 Hz	40.1 dBA	31.5 Hz	40.6 dBA	40 Hz	40.3 dBA
50 Hz	40.9 dBA	63 Hz	38.1 dBA	80 Hz	34.7 dBA
100 Hz	34.2 dBA	125 Hz	35.2 dBA	160 Hz	34.4 dBA
200 Hz	34.3 dBA	250 Hz	35.3 dBA	315 Hz	34.0 dBA
400 Hz	35.0 dBA	500 Hz	36.0 dBA	630 Hz	35.9 dBA
800 Hz	35.6 dBA	1000 Hz	36.4 dBA	1250 Hz	34.7 dBA
1600 Hz	33.7 dBA	2000 Hz	30.8 dBA	2500 Hz	28.4 dBA
3150 Hz	25.3 dBA	4000 Hz	23.3 dBA	5000 Hz	19.1 dBA
6300 Hz	15.8 dBA	8000 Hz	13.0 dBA	10000 Hz	9.6 dBA
12500 Hz	8.3 dBA	16000 Hz	8.2 dBA	20000 Hz	9.0 dBA

Rilievo Fonometrico **SEL TRAM**

Data, ora misura: 07/06/2016 15:18:52

Misura effettuata per caratterizzare il SEL del transito di un tram su rotaia senza sosta ad 1 m dal bordo rotaia ed a 2 m di altezza dal pavimento a circa 7 m dal centro carreggiata di via Turati.



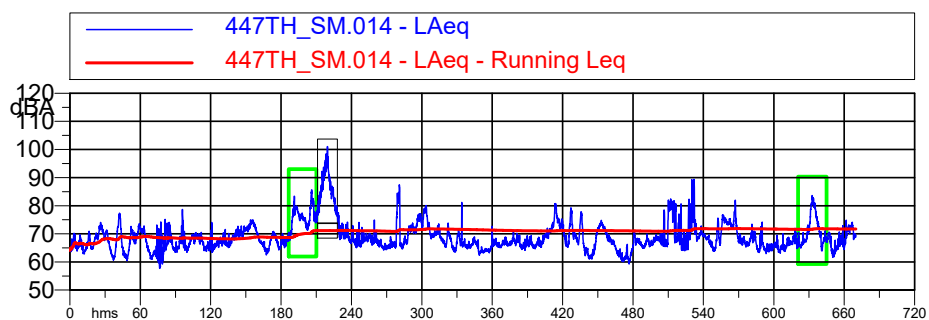
$L_{Aeq} = 74.1$ dBA

SEL = 84.5 dBA



Data, ora misura: 07/06/2016 15:20:00

Misura effettuata per caratterizzare la linea dei tram su rotaia ad 1 m dal bordo rotaia ed a 2 m di altezza dal pavimento a circa 7 m dal centro carreggiata di via Turati. Sono stati individuati i 2 contributi dei transiti in presenza di traffico prevalente su via Turati. E' stato mascherato il passaggio di una ambulanza. In verde i transiti dei tram.



$L_{Aeq} = 71.7$ dBA

SEL transito 1 = 91.0 dBA

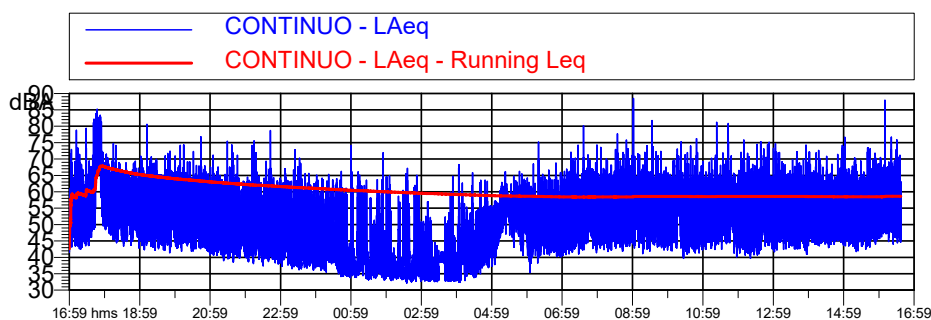
SEL transito 2 = 88.4 dBA



Rilievo Fonometrico CONTINUO

Data, ora misura: 06/06/2016 16:59:42

Misura effettuata sul fronte della ferrovia sul tetto della Guardiania di via Forlanini a 4.5 m di altezza dal pavimento ed a 60 m dalla ferrovia.



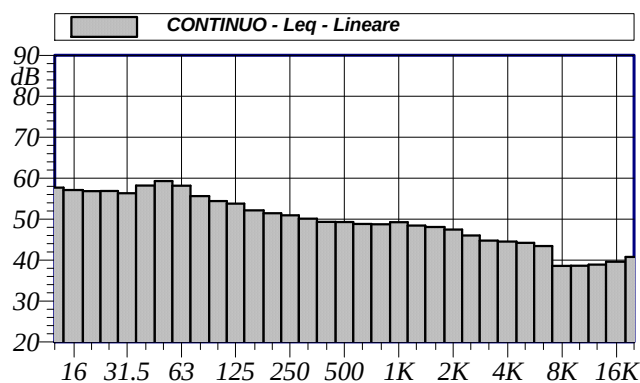
$$L_{Aeq} = 58.7 \text{ dBA}$$

L1: 77.9 dBA L5: 73.2 dBA

L10: 70.8 dBA L50: 62.1 dBA

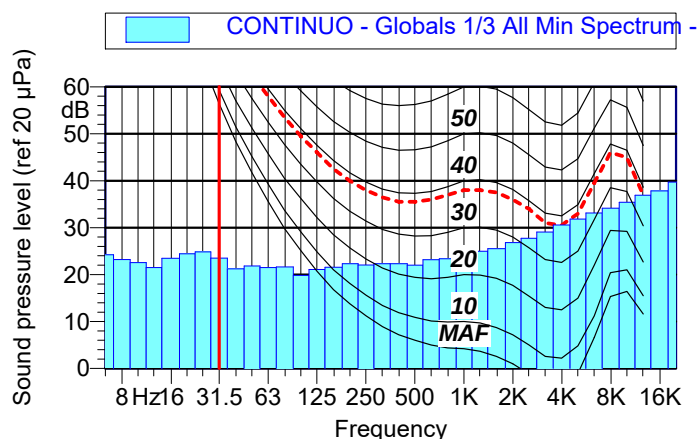
L90: 53.1 dBA L95: 52.0 dBA

Analisi Spettro in frequenza 1/3 ottava



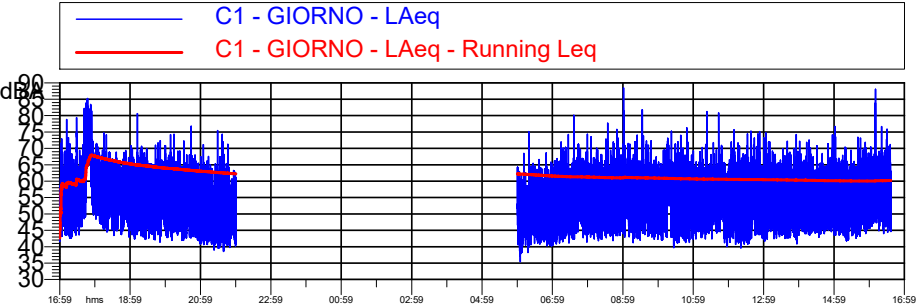
CONTINUO Leq - Lineare					
dB		dB		dB	
12.5 Hz	57.7 dB	16 Hz	57.1 dB	20 Hz	56.8 dB
25 Hz	56.9 dB	31.5 Hz	56.3 dB	40 Hz	58.2 dB
50 Hz	59.3 dB	63 Hz	58.2 dB	80 Hz	55.6 dB
100 Hz	54.4 dB	125 Hz	53.8 dB	160 Hz	52.1 dB
200 Hz	51.4 dB	250 Hz	50.9 dB	315 Hz	50.1 dB
400 Hz	49.3 dB	500 Hz	49.3 dB	630 Hz	48.8 dB
800 Hz	48.7 dB	1000 Hz	49.3 dB	1250 Hz	48.4 dB
1600 Hz	48.1 dB	2000 Hz	47.5 dB	2500 Hz	46.0 dB
3150 Hz	44.7 dB	4000 Hz	44.5 dB	5000 Hz	44.2 dB
6300 Hz	43.4 dB	8000 Hz	38.6 dB	10000 Hz	38.6 dB
12500 Hz	38.9 dB	16000 Hz	39.6 dB	20000 Hz	40.8 dB

Analisi Ricerca Toni Puri



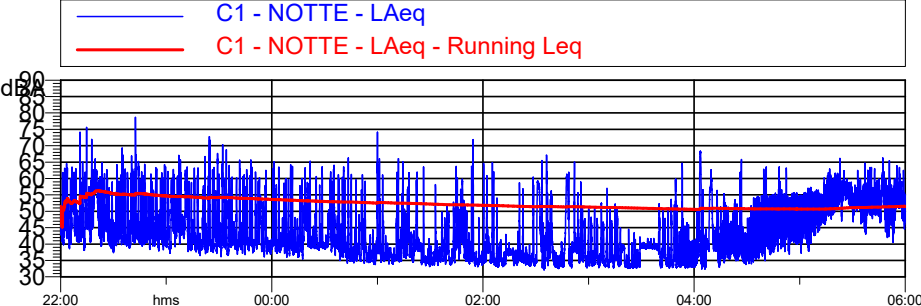
CONTINUO Globals 1/3 All Min Spectrum -					
Hz	dB	Hz	dB	Hz	dB
12.5 Hz	21.5 dBA	16 Hz	23.5 dBA	20 Hz	24.4 dBA
25 Hz	24.9 dBA	31.5 Hz	23.5 dBA	40 Hz	21.2 dBA
50 Hz	21.9 dBA	63 Hz	21.5 dBA	80 Hz	21.6 dBA
100 Hz	19.8 dBA	125 Hz	21.1 dBA	160 Hz	21.6 dBA
200 Hz	22.3 dBA	250 Hz	22.0 dBA	315 Hz	22.3 dBA
400 Hz	22.3 dBA	500 Hz	22.0 dBA	630 Hz	23.2 dBA
800 Hz	23.4 dBA	1000 Hz	24.0 dBA	1250 Hz	25.0 dBA
1600 Hz	25.5 dBA	2000 Hz	26.8 dBA	2500 Hz	27.8 dBA
3150 Hz	29.1 dBA	4000 Hz	30.6 dBA	5000 Hz	31.8 dBA
6300 Hz	33.1 dBA	8000 Hz	34.2 dBA	10000 Hz	35.4 dBA
12500 Hz	36.9 dBA	16000 Hz	37.8 dBA	20000 Hz	39.7 dBA

DIURNO



$L_{Aeq} = 60.2 \text{ dBA}$	
L1: 79.1 dBA	L5: 74.3 dBA
L10: 72.0 dBA	L50: 64.4 dBA
L90: 59.2 dBA	L95: 58.0 dBA

NOTTURNO



$L_{Aeq} = 51.5 \text{ dBA}$	
L1: 73.7 dBA	L5: 66.7 dBA
L10: 63.0 dBA	L50: 55.1 dBA
L90: 51.7 dBA	L95: 51.3 dBA