COMUNE DI OGGIONO
Provincia di Lecco

P.zza Garibaldi, 14 23848 Oggiono (Lc)

# Piano di zonizzazione acustica (Pza)
## Variante Generale

## ALLEGATO B
## Schede rilievi acustici

Legge n. 447 del 26 ottobre 1995
Lr. n. 13 del 10 agosto 2001
Dgr. n. 7/9776 del 2 luglio 2002

Adottato con C.C. n. ____ del _____

Approvato con C.C. n. _____ del _____

Dicembre 2016


Studio Sostenibilità Territoriale
Via Pontida, 72 - 20833 Giussano (Mb)
Tel 0362 354308 - Fax 0362 354708
P.I./C.F. 03304240124
info@studiososter.it - www.studiososter.it

STUDIO TECNICO BASSANI – LODI RIZZINI
Sede Legale
Via Papa Giovanni XXIII, 8 - 22070 Capiago Intimiano (CO)
Sede Operativa
Via Livescia, 1 - 22073 Fino Mornasco (CO)
Tel.: 031 88 919 51 Fax: 031 72 93 11 92
E-mail: info@studiotecnicobl.it
C.F. e P.IVA: 02797890130

# COMUNE DI OGGIONO

## Provincia di Lecco

P.zza Garibaldi, 14 23848 Oggiono (Lc)

## Scheda Rilievo n. 1

| | |
|---|---|
| Punto di Misura: | P1<br>Scuola secondaria di secondo grado<br>"ISTITUTO BACHELET" |
| Coordinate rilievo | |
| 526101,05 m E – 5071031,08 m N | |

| Data inizio rilievo | Data fine rilievo |
|---|---|
| 15/10/2013 | 16/10/2013 |
| Durata rilievo | 83140 s |
| Zonizzazione acustica vigente | Classe II |
| Zonizzazione acustica proposta | **Classe II** |

| Rilievo Diurno | | | | | | |
|---|---|---|---|---|---|---|
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **57,5** | 39,0 | 40,0 | 45,6 | 57,6 | 61,4 | 71,7 |

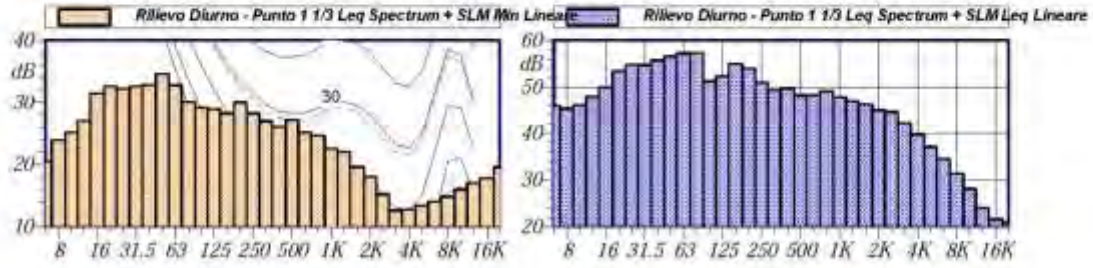
| Rilievo Notturno | | | | | | |
|---|---|---|---|---|---|---|
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **42,5** | 33,7 | 34,7 | 37,4 | 42,2 | 44,7 | 54,6 |

NOTE: Valore diurno di poco superiore al limite di classificazione, dovuto principalmente al traffico indotto dalla scuola stessa. Si ritiene di confermare classe II.

| | |
|---|---|
| **Nome misura:** | **Rilievo Diurno - Punto 1** |
| **Località:** | **Rilievo in P1** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **83140 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **15/10/2013 09:23:32** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievo Diurno - Punto 1
1/3 Leq Spettrum + SLM Leq
Lineare

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 47.9 dB | 160 Hz | 54.9 dB | 2000 Hz | 44.9 dB |
| 16 Hz | 46.9 dB | 200 Hz | 53.2 dB | 2500 Hz | 44.6 dB |
| 20 Hz | 50.4 dB | 250 Hz | 50.9 dB | 3150 Hz | 42.3 dB |
| 25 Hz | 54.7 dB | 315 Hz | 49.2 dB | 4000 Hz | 39.6 dB |
| 31.5 Hz | 54.7 dB | 400 Hz | 49.6 dB | 5000 Hz | 37.1 dB |
| 40 Hz | 55.7 dB | 500 Hz | 48.3 dB | 6300 Hz | 34.8 dB |
| 50 Hz | 58.5 dB | 630 Hz | 48.3 dB | 8000 Hz | 31.3 dB |
| 63 Hz | 57.2 dB | 800 Hz | 48.1 dB | 10000 Hz | 29.1 dB |
| 80 Hz | 57.3 dB | 1000 Hz | 47.7 dB | 12500 Hz | 24.0 dB |
| 100 Hz | 51.1 dB | 1250 Hz | 46.6 dB | 16000 Hz | 21.8 dB |
| 125 Hz | 53.2 dB | 1600 Hz | 46.2 dB | 20000 Hz | 20.7 dB |




| | |
|---|---|
| L1: 71.7 dBA | L5: 61.4 dBA |
| L10: 57.6 dBA | L50: 45.6 dBA |
| L90: 40.0 dBA | L95: 39.0 dBA |

$L_{Aeq} = 57.3$ dB

Annotazioni: Sereno, assenza di pioggia e vento

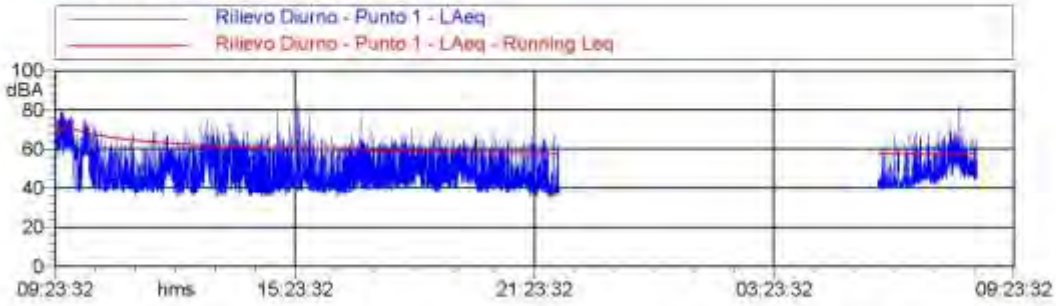
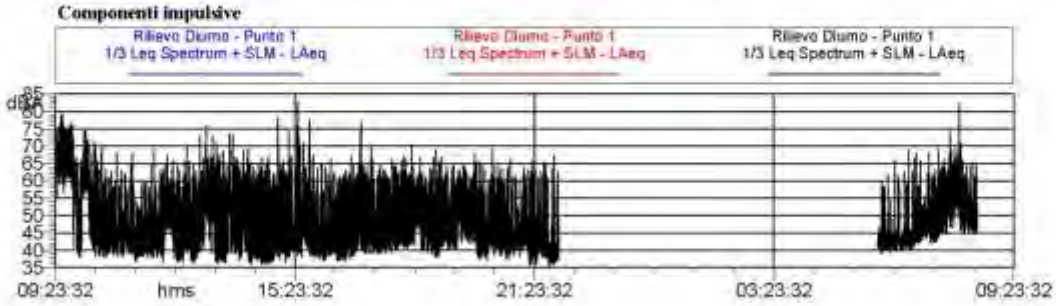



**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *09:23:32* | *15:05:39.500* | *57.3 dBA* |
| *Non Mascherato* | *09:23:32* | *15:05:39.500* | *57.3 dBA* |
| *Mascherato* | | *00:00:00* | *0.0 dBA* |

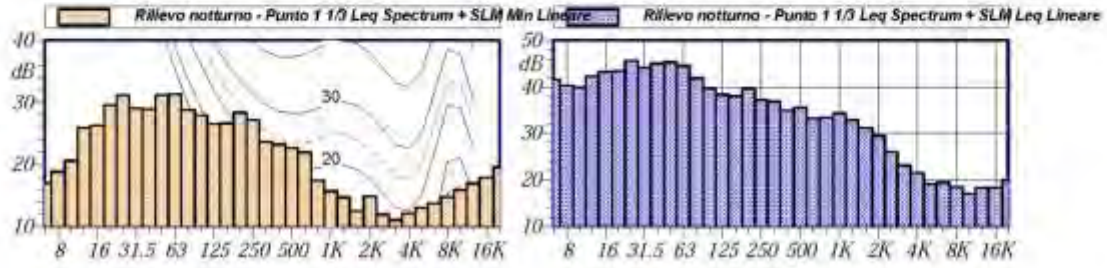
**Componenti impulsive**



| | |
|---|---|
| **Nome misura:** | **Rilievo notturno - Punto 1** |
| **Località:** | **Rilievo P1** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **28800 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **15/10/2013 22:00:00** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievo notturno - Punto 1
1/3 Leq Spectrum + SLM Leq
Lineare

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 42.1 dB | 160 Hz | 38.0 dB | 2000 Hz | 20.5 dB |
| 16 Hz | 43.2 dB | 200 Hz | 39.5 dB | 2500 Hz | 20.0 dB |
| 20 Hz | 42.4 dB | 250 Hz | 37.2 dB | 3150 Hz | 22.1 dB |
| 25 Hz | 45.6 dB | 315 Hz | 36.8 dB | 4000 Hz | 21.4 dB |
| 31.5 Hz | 44.1 dB | 400 Hz | 34.3 dB | 5000 Hz | 19.1 dB |
| 40 Hz | 45.0 dB | 500 Hz | 35.0 dB | 6300 Hz | 19.4 dB |
| 50 Hz | 45.2 dB | 630 Hz | 33.2 dB | 8000 Hz | 18.5 dB |
| 63 Hz | 44.5 dB | 800 Hz | 33.4 dB | 10000 Hz | 17.0 dB |
| 80 Hz | 41.6 dB | 1000 Hz | 34.1 dB | 12500 Hz | 16.3 dB |
| 100 Hz | 39.6 dB | 1250 Hz | 32.9 dB | 16000 Hz | 15.3 dB |
| 125 Hz | 38.3 dB | 1600 Hz | 31.2 dB | 20000 Hz | 10.9 dB |




| | |
|---|---|
| L1: 54.6 dBA | L5: 44.7 dBA |
| L10: 42.2 dBA | L50: 37.4 dBA |
| L90: 34.7 dBA | L95: 33.7 dBA |

$L_{Aeq} = 42.5$ dB

Annotazioni: Sereno, assenza di pioggia e vento

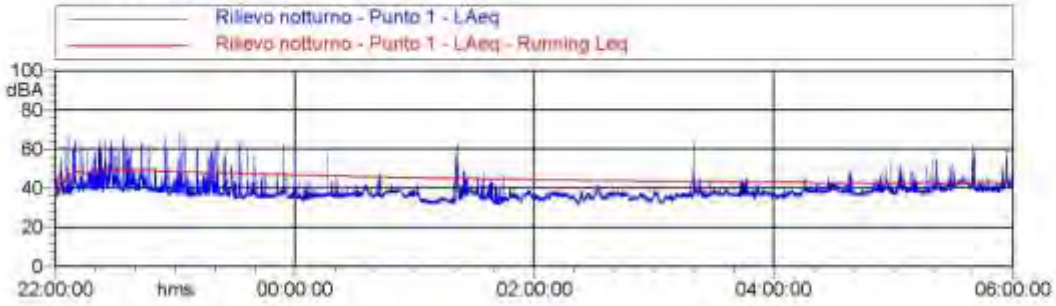
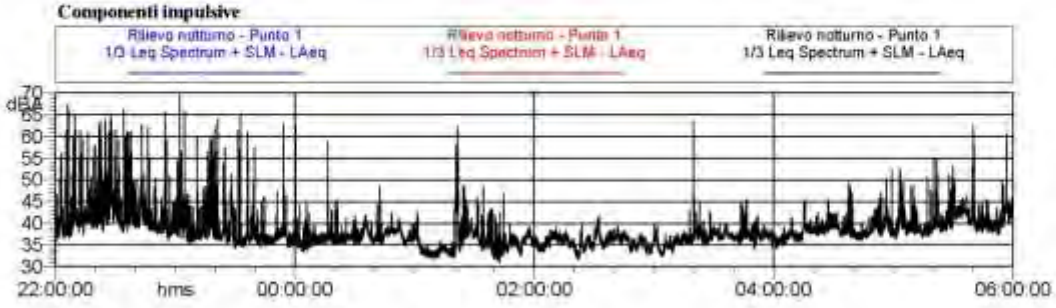



**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *22:00:00* | *08:00:00* | *42.5 dBA* |
| *Non Mascherato* | *22:00:00* | *08:00:00* | *42.5 dBA* |
| *Mascherato* | | *00:00:00* | *0.0 dBA* |

**Componenti impulsive**



# COMUNE DI OGGIONO
## Provincia di Lecco
P.zza Garibaldi, 14 23848 Oggiono (Lc)


## Scheda Rilievo n. 2

| Punto di Misura: | P2<br>Scuola secondaria di primo grado “Marco d’Oggiono” |
|---|---|
| Coordinate rilievo | |
| 527355,37 m E – 5070935,72 m N | |

| Data inizio rilievo | Data fine rilievo |
|---|---|
| 17/10/2013 | 18/10/2013 |
| Durata rilievo | 86428 s |
| Zonizzazione acustica vigente | Classe II |
| Zonizzazione acustica proposta | **Classe II** |

| Rilievo Diurno | | | | | | |
|---|---|---|---|---|---|---|
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **63,6** | 51,2 | 53,5 | 62,0 | 66,9 | 68,1 | 70,9 |

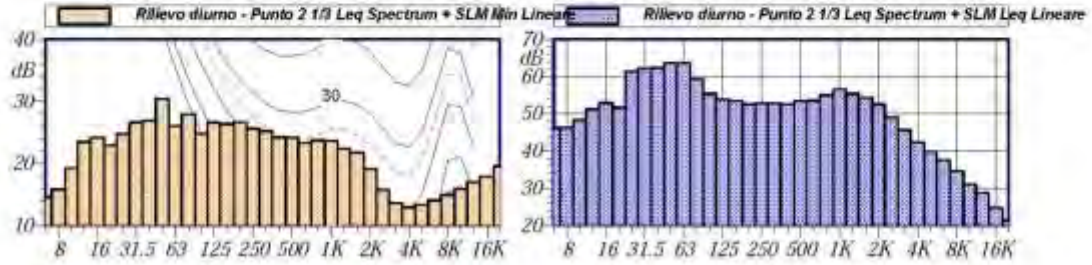
| Rilievo Notturno | | | | | | |
|---|---|---|---|---|---|---|
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **58,6** | 27,4 | 28,1 | 42,4 | 63,6 | 66,4 | 69,9 |

NOTE: Valore diurno superiore al limite di classificazione, dovuto principalmente al traffico sulla SP51. Si ritiene di confermare classe II per destinazione d’uso. Il piano di bonifica non si rende necessario in quanto la scuola si è recentemente dotata di serramenti a tenuta acustica.

| | |
|---|---|
| **Nome misura:** | **Rilievo diurno - Punto 2** |
| **Località:** | **Rilievo P2** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **86428 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **17/10/2013 09:27:20** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievo diurno - Punto 2
1/3 Leq Spectrum + SLM Leq
Lineare

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 51.2 dB | 160 Hz | 43.3 dB | 2000 Hz | 52.5 dB |
| 16 Hz | 52.3 dB | 200 Hz | 52.4 dB | 2500 Hz | 49.0 dB |
| 20 Hz | 51.6 dB | 250 Hz | 52.7 dB | 3150 Hz | 45.0 dB |
| 25 Hz | 51.3 dB | 315 Hz | 52.8 dB | 4000 Hz | 42.3 dB |
| 31.5 Hz | 52.3 dB | 400 Hz | 52.5 dB | 5000 Hz | 39.8 dB |
| 40 Hz | 52.1 dB | 500 Hz | 53.4 dB | 6300 Hz | 37.4 dB |
| 50 Hz | 50.6 dB | 630 Hz | 53.5 dB | 8000 Hz | 34.6 dB |
| 63 Hz | 53.7 dB | 800 Hz | 55.0 dB | 10000 Hz | 31.6 dB |
| 80 Hz | 53.3 dB | 1000 Hz | 55.5 dB | 12500 Hz | 28.7 dB |
| 100 Hz | 55.4 dB | 1250 Hz | 55.3 dB | 16000 Hz | 24.7 dB |
| 125 Hz | 53.8 dB | 1600 Hz | 54.2 dB | 20000 Hz | 21.3 dB |




| | |
|---|---|
| L1: 70.9 dBA | L5: 68.1 dBA |
| L10: 66.9 dBA | L50: 62.0 dBA |
| L90: 53.5 dBA | L95: 51.2 dBA |

$L_{Aeq} = 63.6$ dB

Annotazioni: Sereno, assenza di pioggia e vento

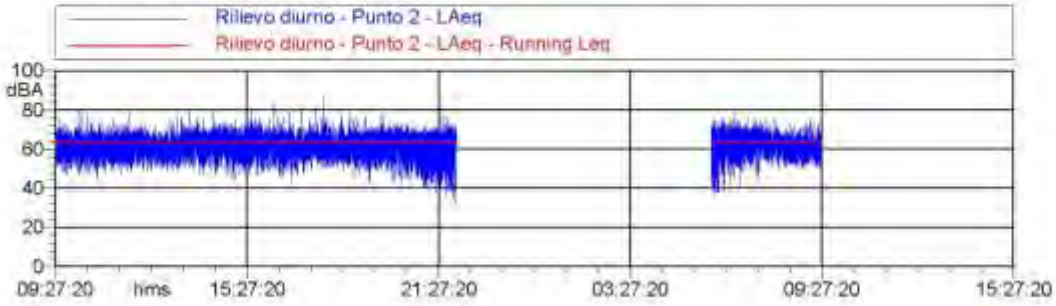
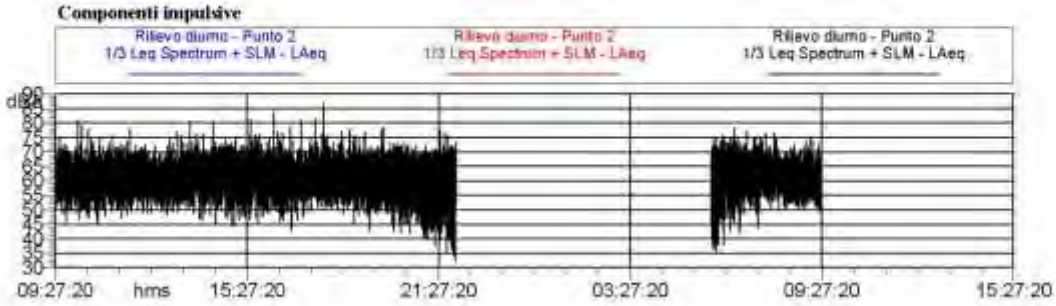



**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *09:27:20* | *16.00.27.500* | *63.6 dBA* |
| *Non Mascherato* | *09:27:20* | *16.00.27.500* | *63.6 dBA* |
| *Mascherato* | | *00.00.00* | *0.0 dBA* |

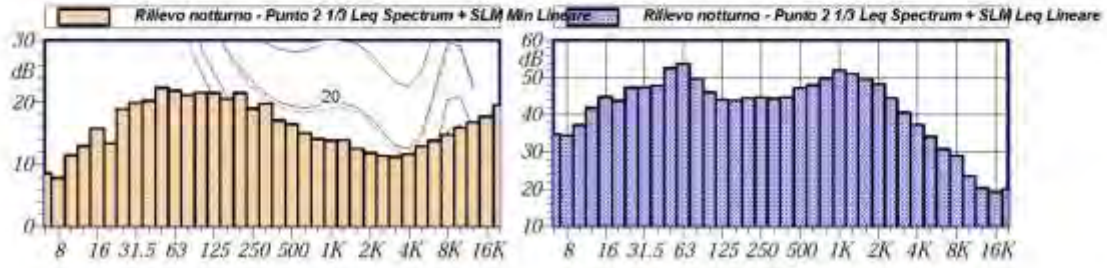
**Componenti impulsive**



| | |
|---|---|
| **Nome misura:** | **Rilievo notturno - Punto 2** |
| **Località:** | **Rilievo P2** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **28800 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **17/10/2013 22:00:00** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievo notturno - Punto 2
1/3 Leq Spectrum + SLM Leq Lineare

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 41.0 dB | 160 Hz | 44.2 dB | 2000 Hz | 40.2 dB |
| 16 Hz | 44.7 dB | 200 Hz | 44.5 dB | 2500 Hz | 44.6 dB |
| 20 Hz | 43.1 dB | 250 Hz | 44.7 dB | 3150 Hz | 40.0 dB |
| 25 Hz | 47.2 dB | 315 Hz | 44.3 dB | 4000 Hz | 37.4 dB |
| 31.5 Hz | 47.4 dB | 400 Hz | 44.6 dB | 5000 Hz | 34.0 dB |
| 40 Hz | 47.5 dB | 500 Hz | 47.1 dB | 6300 Hz | 30.7 dB |
| 50 Hz | 52.5 dB | 630 Hz | 47.9 dB | 8000 Hz | 28.9 dB |
| 63 Hz | 53.6 dB | 800 Hz | 49.4 dB | 10000 Hz | 25.5 dB |
| 80 Hz | 48.7 dB | 1000 Hz | 51.3 dB | 12500 Hz | 20.2 dB |
| 100 Hz | 46.0 dB | 1250 Hz | 50.9 dB | 16000 Hz | 18.1 dB |
| 125 Hz | 44.0 dB | 1600 Hz | 49.7 dB | 20000 Hz | 15.9 dB |




| | |
|---|---|
| L1: 69.9 dBA | L5: 66.4 dBA |
| L10: 63.6 dBA | L50: 42.4 dBA |
| L90: 28.1 dBA | L95: 27.4 dBA |

$L_{Aeq} = 58.6$ dB

Annotazioni: Sereno, assenza di pioggia e vento

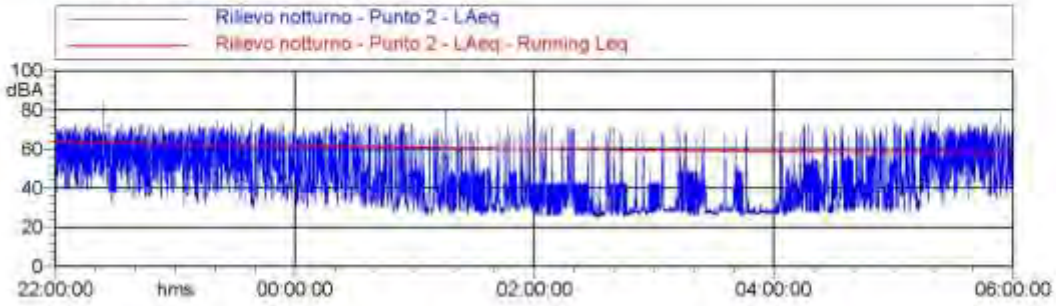
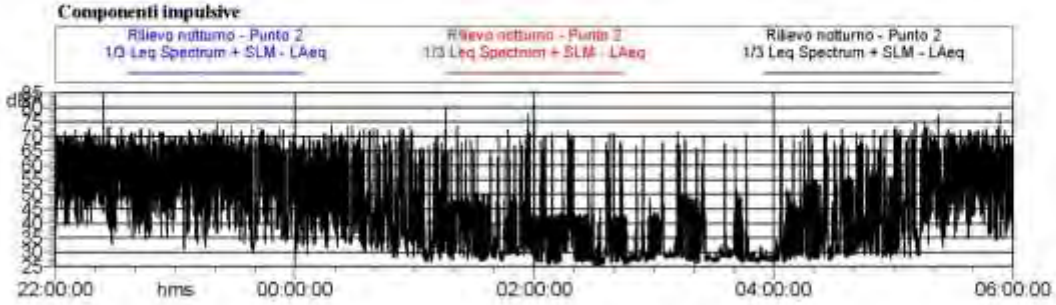



**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *22:00:00* | *08:00:00* | *58.6 dBA* |
| *Non Mascherato* | *22:00:00* | *08:00:00* | *58.6 dBA* |
| *Mascherato* | | *00:00:00* | *0.0 dBA* |

**Componenti impulsive**



# COMUNE DI OGGIONO
## Provincia di Lecco
P.zza Garibaldi, 14 23848 Oggiono (Lc)


## Scheda Rilievo n. 3

| | |
|---|---|
| Punto di Misura: | P3<br>Scuola primaria "A. Diaz" |
| Coordinate rilievo | |
| 527291,48 m E – 5071017,63 m N | |

| | |
|---|---|
| Data inizio rilievo | Data fine rilievo |
| 18/10/2013 | 19/10/2013 |
| Durata rilievo | 83673 s |
| Zonizzazione acustica vigente | Classe II |
| Zonizzazione acustica proposta | **Classe II** |

| Rilievo Diurno | | | | | | |
|---|---|---|---|---|---|---|
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **55,8** | 46,1 | 48,2 | 53,5 | 58,1 | 59,7 | 63,8 |

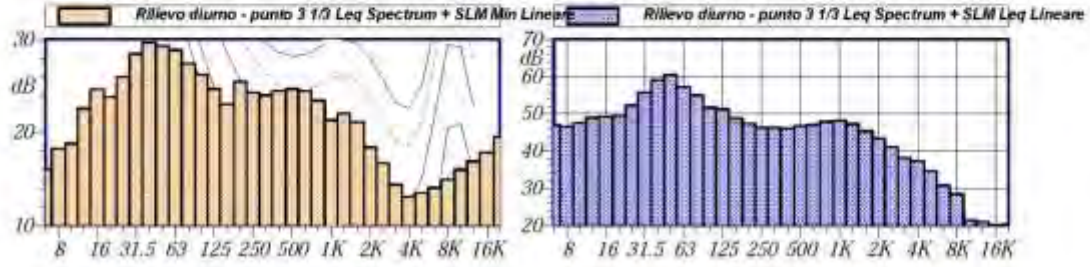
| Rilievo Notturno | | | | | | |
|---|---|---|---|---|---|---|
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **48,8** | 29,3 | 30,4 | 42,2 | 52,6 | 54,5 | 57,6 |

NOTE: Valore diurno leggermente superiore al limite di classificazione, dovuto principalmente al traffico sulla SP51. Si ritiene di confermare classe II per destinazione d'uso.

| | |
|---|---|
| **Nome misura:** | **Rilievo diurno - punto 3** |
| **Località:** | **Rilievo P3** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **83673 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **18/10/2013 09:40:05** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievo diurno - punto 3
1/3 Leq Spectrum + SLM Leq
Lineare

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 49.0 dB | 160 Hz | 46.7 dB | 2000 Hz | 43.4 dB |
| 16 Hz | 49.2 dB | 200 Hz | 47.4 dB | 2500 Hz | 41.0 dB |
| 20 Hz | 49.4 dB | 250 Hz | 46.3 dB | 3150 Hz | 39.1 dB |
| 25 Hz | 52.1 dB | 315 Hz | 46.2 dB | 4000 Hz | 37.3 dB |
| 31.5 Hz | 56.7 dB | 400 Hz | 46.1 dB | 5000 Hz | 34.6 dB |
| 40 Hz | 59.0 dB | 500 Hz | 46.7 dB | 6300 Hz | 30.7 dB |
| 50 Hz | 59.4 dB | 630 Hz | 47.1 dB | 8000 Hz | 28.4 dB |
| 63 Hz | 57.2 dB | 800 Hz | 47.2 dB | 10000 Hz | 31.3 dB |
| 80 Hz | 55.0 dB | 1000 Hz | 46.1 dB | 12500 Hz | 31.0 dB |
| 100 Hz | 51.6 dB | 1250 Hz | 47.3 dB | 16000 Hz | 30.1 dB |
| 125 Hz | 51.2 dB | 1600 Hz | 45.3 dB | 20000 Hz | 20.4 dB |




| | |
|---|---|
| L1: 63.8 dBA | L5: 59.7 dBA |
| L10: 58.1 dBA | L50: 53.5 dBA |
| L90: 48.2 dBA | L95: 46.1 dBA |

$L_{Aeq} = 55.8$ dB

Annotazioni: Sereno, assenza doi pioggia e di vento

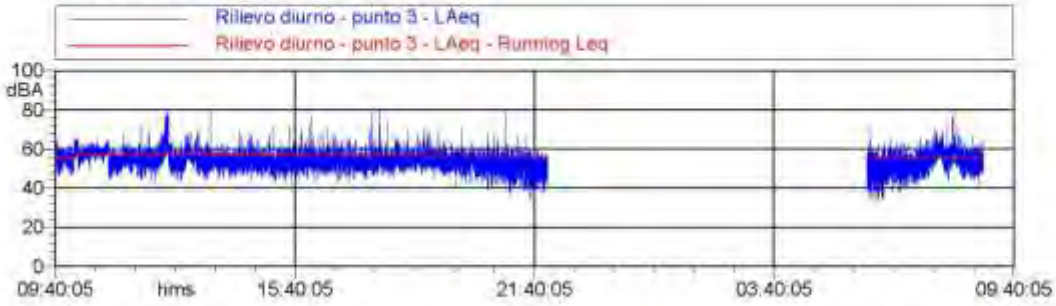
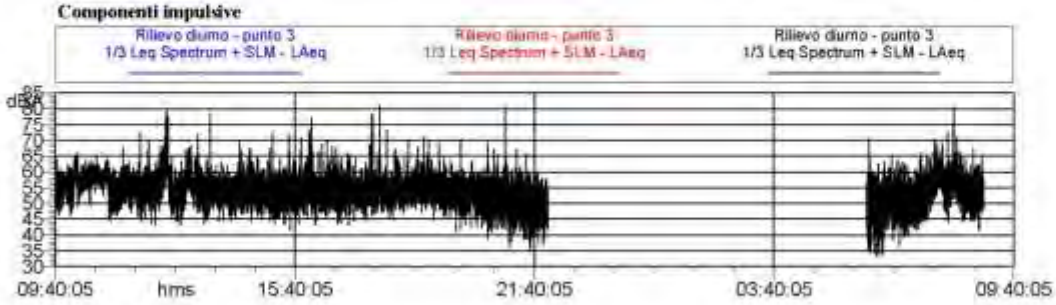



**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *09:40:05* | *15:14:33* | *55.8 dBA* |
| *Non Mascherato* | *09:40:05* | *15:14:33* | *55.8 dBA* |
| *Mascherato* | | *00:00:00* | *0.0 dBA* |

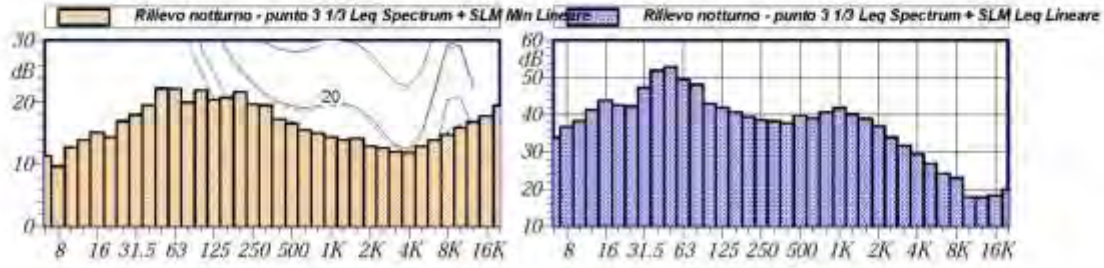
**Componenti impulsive**



| | |
|---|---|
| **Nome misura:** | **Rilievo notturno - punto 3** |
| **Località:** | **Rilievo P3** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **28800 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **18/10/2013 22:00:00** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievo notturno - punto 3
1/3 Leq Spectrum + SLM Leq Lineare

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 41.4 dB | 160 Hz | 40.6 dB | 2000 Hz | 30.9 dB |
| 16 Hz | 43.3 dB | 200 Hz | 39.3 dB | 2500 Hz | 33.8 dB |
| 20 Hz | 42.5 dB | 250 Hz | 39.6 dB | 3150 Hz | 31.6 dB |
| 25 Hz | 42.2 dB | 315 Hz | 38.3 dB | 4000 Hz | 29.4 dB |
| 31.5 Hz | 47.3 dB | 400 Hz | 37.5 dB | 5000 Hz | 30.8 dB |
| 40 Hz | 51.0 dB | 500 Hz | 39.9 dB | 6300 Hz | 34.2 dB |
| 50 Hz | 52.9 dB | 630 Hz | 39.1 dB | 8000 Hz | 33.0 dB |
| 63 Hz | 49.5 dB | 800 Hz | 40.7 dB | 10000 Hz | 31.9 dB |
| 80 Hz | 46.1 dB | 1000 Hz | 41.8 dB | 12500 Hz | 31.6 dB |
| 100 Hz | 43.0 dB | 1250 Hz | 40.1 dB | 16000 Hz | 35.3 dB |
| 125 Hz | 41.9 dB | 1600 Hz | 38.8 dB | 20000 Hz | 30.9 dB |




| | |
|---|---|
| L1: 57.6 dBA | L5: 54.5 dBA |
| L10: 52.6 dBA | L50: 42.2 dBA |
| L90: 30.4 dBA | L95: 29.3 dBA |

$L_{Aeq} = 48.8$ dB

Annotazioni: Sereno, assenza doi pioggia e di vento

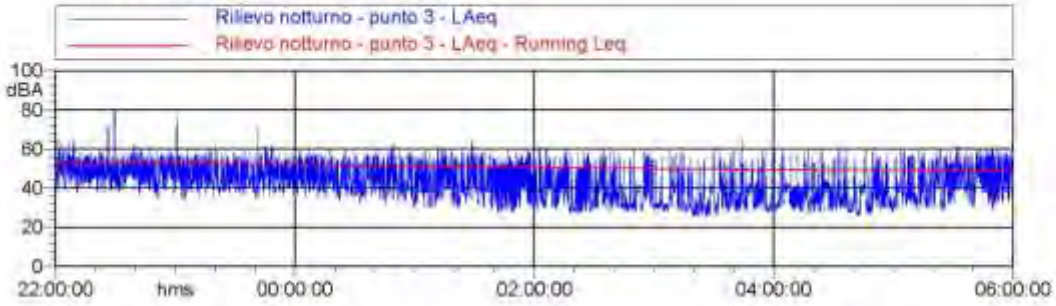
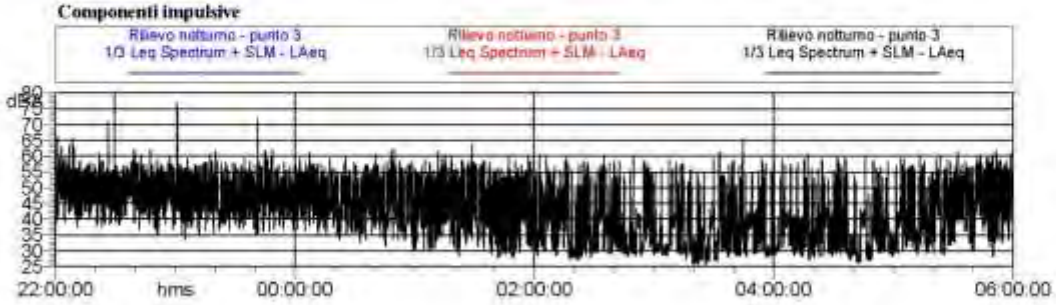



**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *22:00:00* | *08:00:00* | *48.8 dBA* |
| *Non Mascherato* | *22:00:00* | *08:00:00* | *48.8 dBA* |
| *Mascherato* | | *00:00:00* | *0.0 dBA* |

**Componenti impulsive**



# COMUNE DI OGGIONO

## Provincia di Lecco

P.zza Garibaldi, 14 23848 Oggiono (Lc)

## Scheda Rilievo n. 4

| | |
|---|---|
| Punto di Misura: | P4<br>Località Brughello |
| Coordinate rilievo | |
| 524598,51 m E – 5070214,90 m N | |

| | |
|---|---|
| Data inizio rilievo | Data fine rilievo |
| 25/10/2013 | 31/10/2013 |
| Durata rilievo | 509534 s |
| Zonizzazione acustica vigente | Classe II |
| Zonizzazione acustica proposta | **Classe III** |

| Rilievo Diurno | | | | | | |
|---|---|---|---|---|---|---|
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **54,5** | 42,7 | 44,7 | 51,6 | 57,8 | 59,2 | 62,2 |

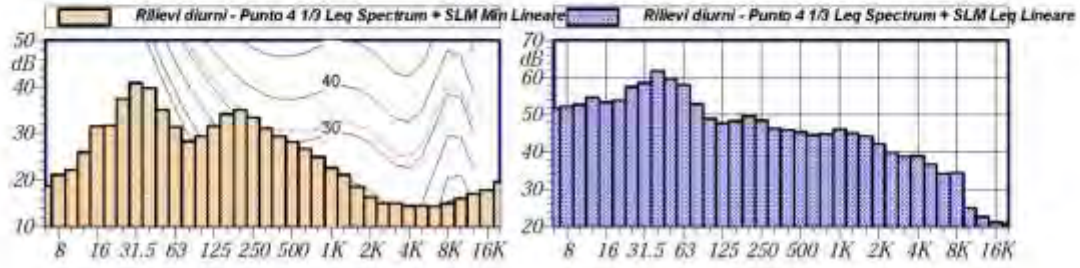
| Rilievo Notturno | | | | | | |
|---|---|---|---|---|---|---|
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **49,2** | 39,6 | 40,7 | 47,2 | 51,9 | 54,1 | 58,4 |

NOTE: Allo scopo di rendere la zonizzazione aderente a quanto previsto dalla DGR Regione Lombardia si ritiene opportuno classificare l'area in III classe.

| | |
|---|---|
| **Nome misura:** | **Rilievi diurni - Punto 4** |
| **Località:** | **Rilievo P4** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **509534 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **25/10/2013 11:42:24** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievi diurni - Punto 4
1/3 Leq Spectrum + SLM Leq Lineare

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 54.6 dB | 160 Hz | 46.3 dB | 2000 Hz | 42.1 dB |
| 16 Hz | 54.3 dB | 200 Hz | 49.6 dB | 2500 Hz | 39.5 dB |
| 20 Hz | 53.8 dB | 250 Hz | 48.5 dB | 3150 Hz | 39.7 dB |
| 25 Hz | 57.5 dB | 315 Hz | 46.3 dB | 4000 Hz | 38.8 dB |
| 31.5 Hz | 58.5 dB | 400 Hz | 45.9 dB | 5000 Hz | 36.6 dB |
| 40 Hz | 61.7 dB | 500 Hz | 45.4 dB | 6300 Hz | 34.1 dB |
| 50 Hz | 59.6 dB | 630 Hz | 44.5 dB | 8000 Hz | 34.3 dB |
| 63 Hz | 58.0 dB | 800 Hz | 44.3 dB | 10000 Hz | 34.9 dB |
| 80 Hz | 55.6 dB | 1000 Hz | 46.0 dB | 12500 Hz | 32.6 dB |
| 100 Hz | 48.9 dB | 1250 Hz | 45.1 dB | 16000 Hz | 31.1 dB |
| 125 Hz | 47.6 dB | 1600 Hz | 44.2 dB | 20000 Hz | 30.6 dB |




| | |
|---|---|
| L1: 62.2 dBA | L5: 59.2 dBA |
| L10: 57.8 dBA | L50: 51.6 dBA |
| L90: 44.7 dBA | L95: 42.7 dBA |

$L_{Aeq} = 54.5$ dB

Annotazioni: 25-26-28/10 Sereno, assenza di pioggia e vento
27-29/10 Pioggia

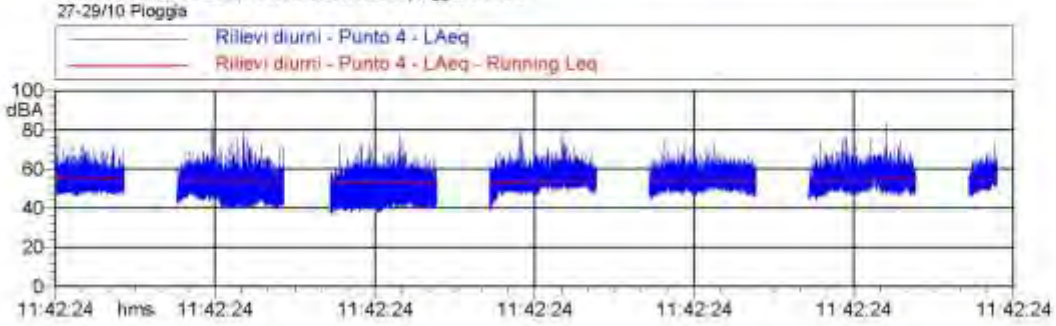
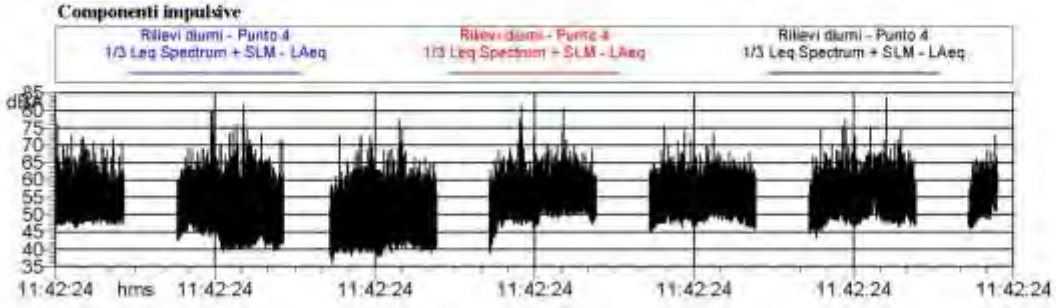



**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *11:42:24* | *94:32:13.500* | *54.5 dBA* |
| *Non Mascherato* | *11:42:24* | *94:32:13.500* | *54.5 dBA* |
| *Mascherato* | | *00:00:00* | *0.0 dBA* |

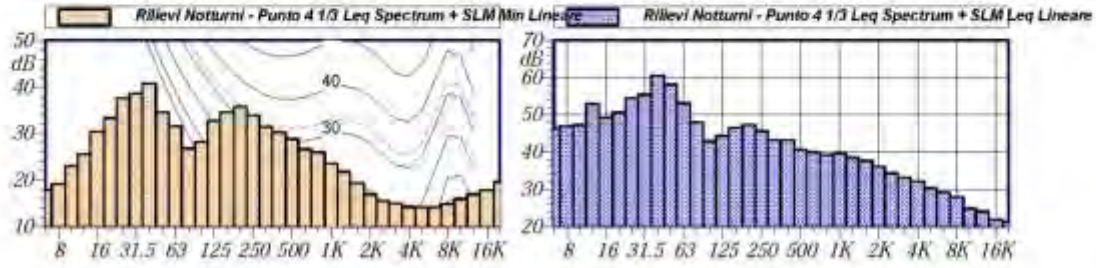
**Componenti impulsive**



| | |
|---|---|
| **Nome misura:** | **Rilievi Notturni - Punto 4** |
| **Località:** | **Rilievo P4** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **457200 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **25/10/2013 22:00:00** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievi Notturni - Punto 4
1/3 Leq Spectrum + SLM Leq Lineare

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 53.0 dB | 160 Hz | 46.5 dB | 2000 Hz | 36.1 dB |
| 16 Hz | 49.2 dB | 200 Hz | 47.4 dB | 2500 Hz | 34.8 dB |
| 20 Hz | 50.5 dB | 250 Hz | 45.5 dB | 3150 Hz | 33.1 dB |
| 25 Hz | 54.5 dB | 315 Hz | 43.1 dB | 4000 Hz | 32.1 dB |
| 31.5 Hz | 56.4 dB | 400 Hz | 43.1 dB | 5000 Hz | 30.3 dB |
| 40 Hz | 55.5 dB | 500 Hz | 40.5 dB | 6300 Hz | 29.1 dB |
| 50 Hz | 53.1 dB | 630 Hz | 39.2 dB | 8000 Hz | 27.8 dB |
| 63 Hz | 53.1 dB | 800 Hz | 39.2 dB | 10000 Hz | 24.8 dB |
| 80 Hz | 47.3 dB | 1000 Hz | 38.6 dB | 12500 Hz | 24.0 dB |
| 100 Hz | 42.6 dB | 1250 Hz | 38.6 dB | 16000 Hz | 21.8 dB |
| 125 Hz | 44.6 dB | 1600 Hz | 37.6 dB | 20000 Hz | 21.1 dB |




| | |
|---|---|
| L1: 58.4 dBA | L5: 54.1 dBA |
| L10: 51.9 dBA | L50: 47.2 dBA |
| L90: 40.7 dBA | L95: 39.6 dBA |

$L_{Aeq} = 49.2$ dB

Annotazioni: 25-26-28/10 Sereno, assenza di pioggia e vento
27-29/10 Pioggia

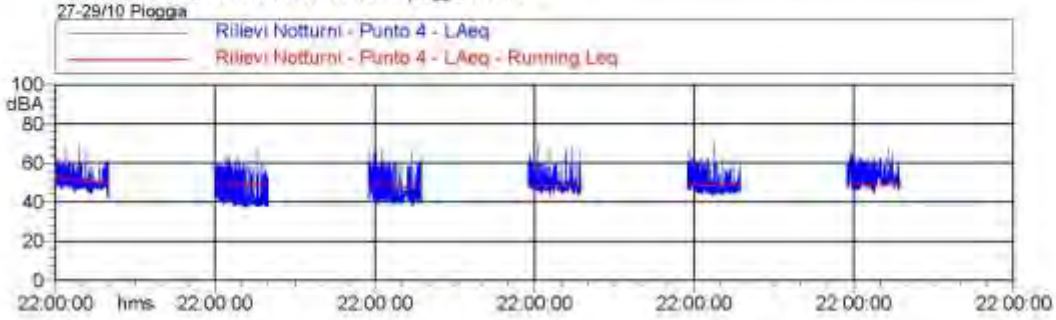
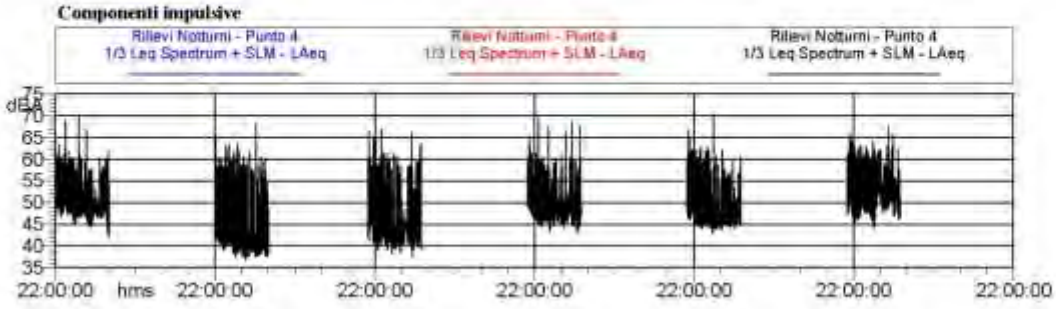



**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *22:00:00* | *48:00:00* | *49.2 dBA* |
| *Non Mascherato* | *22:00:00* | *48:00:00* | *49.2 dBA* |
| *Mascherato* | | *00:00:00* | *0.0 dBA* |

**Componenti impulsive**



# COMUNE DI OGGIONO
## Provincia di Lecco
P.zza Garibaldi, 14 23848 Oggiono (Lc)


## Scheda Rilievo n. 5

| | |
|---|---|
| Punto di Misura: | P5<br>Località Rettola |
| Coordinate rilievo | |
| 524866,92 m E – 5069847,11 m N | |

| | |
|---|---|
| Data inizio rilievo | Data fine rilievo |
| 05/11/2013 | 08/11/2013 |
| Durata rilievo | 253789 s |
| Zonizzazione acustica vigente | Classe III |
| Zonizzazione acustica proposta | **Classe IV** |

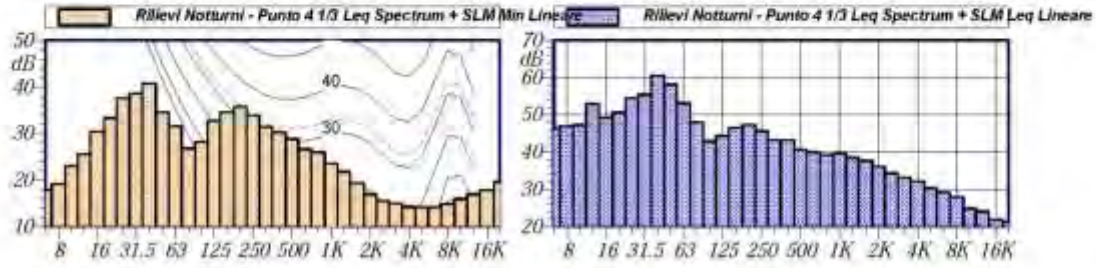
| Rilievo Diurno | | | | | | |
|---|---|---|---|---|---|---|
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **64,8** | 47,4 | 49,4 | 58,3 | 68,7 | 70,6 | 74,9 |
| Rilievo Notturno | | | | | | |
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **54,9** | 37,3 | 37,9 | 42,9 | 51,2 | 58,2 | 69,3 |

NOTE: Allo scopo di rendere la zonizzazione aderente a quanto previsto dalla DGR Regione Lombardia si ritiene opportuno classificare l'area in IV classe.

| | |
|---|---|
| **Nome misura:** | **Rilievi Notturni - Punto 4** |
| **Località:** | **Rilievo P4** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **457200 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **25/10/2013 22:00:00** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievi Notturni - Punto 4
1/3 Leq Spectrum + SLM Leq Lineare

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 53.0 dB | 160 Hz | 46.5 dB | 2000 Hz | 36.1 dB |
| 16 Hz | 49.2 dB | 200 Hz | 47.4 dB | 2500 Hz | 34.8 dB |
| 20 Hz | 50.5 dB | 250 Hz | 45.5 dB | 3150 Hz | 33.1 dB |
| 25 Hz | 54.5 dB | 315 Hz | 43.1 dB | 4000 Hz | 32.1 dB |
| 31.5 Hz | 56.4 dB | 400 Hz | 43.1 dB | 5000 Hz | 30.3 dB |
| 40 Hz | 55.5 dB | 500 Hz | 40.5 dB | 6300 Hz | 29.1 dB |
| 50 Hz | 53.1 dB | 630 Hz | 39.2 dB | 8000 Hz | 27.8 dB |
| 63 Hz | 53.1 dB | 800 Hz | 39.2 dB | 10000 Hz | 24.8 dB |
| 80 Hz | 47.3 dB | 1000 Hz | 38.6 dB | 12500 Hz | 24.0 dB |
| 100 Hz | 42.6 dB | 1250 Hz | 38.6 dB | 16000 Hz | 21.8 dB |
| 125 Hz | 44.6 dB | 1600 Hz | 37.6 dB | 20000 Hz | 21.1 dB |




| | |
|---|---|
| L1: 58.4 dBA | L5: 54.1 dBA |
| L10: 51.9 dBA | L50: 47.2 dBA |
| L90: 40.7 dBA | L95: 39.6 dBA |

$L_{Aeq} = 49.2$ dB

Annotazioni: 25-26-28/10 Sereno, assenza di pioggia e vento
27-29/10 Pioggia

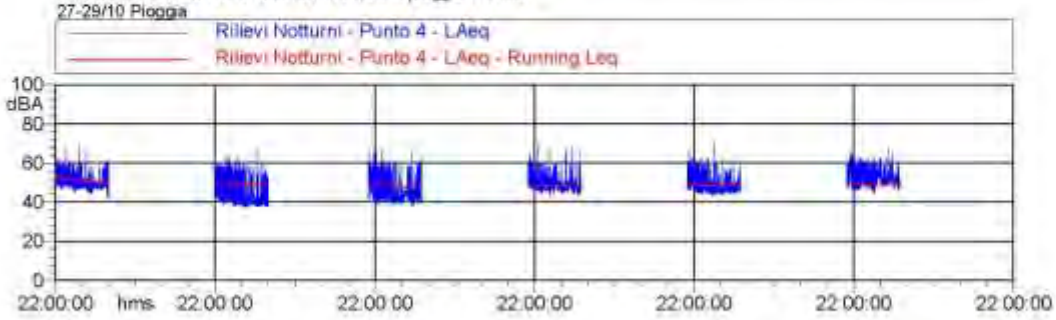
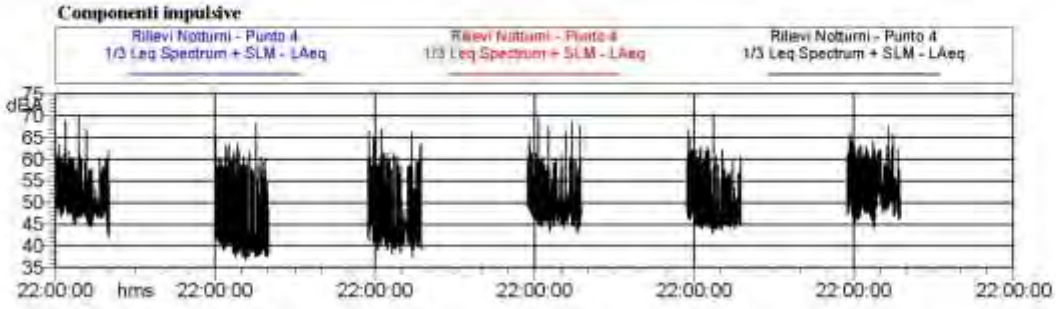



**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *22:00:00* | *48:00:00* | *49.2 dBA* |
| *Non Mascherato* | *22:00:00* | *48:00:00* | *49.2 dBA* |
| *Mascherato* | | *00:00:00* | *0.0 dBA* |

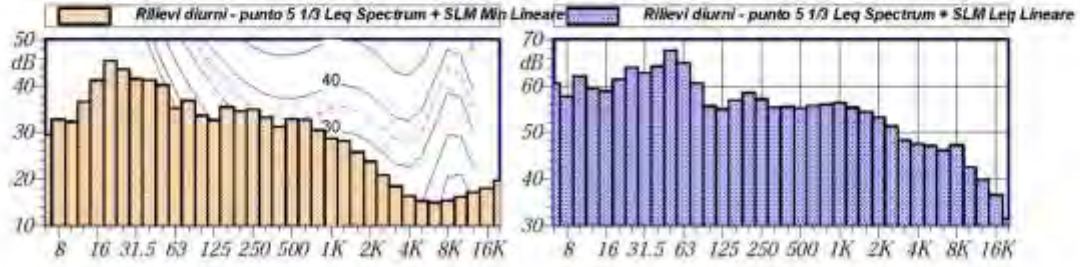
**Componenti impulsive**



| | |
|---|---|
| **Nome misura:** | **Rilievi diurni - punto 5** |
| **Località:** | **Rilievo P5** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **253789 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **05/11/2013 09:32:42** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievi diurni - punto 5
1/3 Leq Spectrum + SLM Leq
Lineare

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 59.4 dB | 160 Hz | 58.9 dB | 2000 Hz | 57.7 dB |
| 16 Hz | 59.6 dB | 200 Hz | 59.5 dB | 2500 Hz | 51.8 dB |
| 20 Hz | 61.4 dB | 250 Hz | 57.1 dB | 3150 Hz | 49.3 dB |
| 25 Hz | 64.9 dB | 315 Hz | 56.4 dB | 4000 Hz | 47.5 dB |
| 31.5 Hz | 62.7 dB | 400 Hz | 55.5 dB | 5000 Hz | 47.1 dB |
| 40 Hz | 64.1 dB | 500 Hz | 55.2 dB | 6300 Hz | 46.1 dB |
| 50 Hz | 67.6 dB | 630 Hz | 56.7 dB | 8000 Hz | 47.2 dB |
| 63 Hz | 65.9 dB | 800 Hz | 55.9 dB | 10000 Hz | 42.5 dB |
| 80 Hz | 60.6 dB | 1000 Hz | 58.4 dB | 12500 Hz | 39.8 dB |
| 100 Hz | 65.9 dB | 1250 Hz | 58.3 dB | 16000 Hz | 36.5 dB |
| 125 Hz | 65.0 dB | 1600 Hz | 54.4 dB | 20000 Hz | 31.5 dB |




| | |
|---|---|
| L1: 74.9 dBA | L5: 70.6 dBA |
| L10: 68.7 dBA | L50: 58.3 dBA |
| L90: 49.4 dBA | L95: 47.4 dBA |

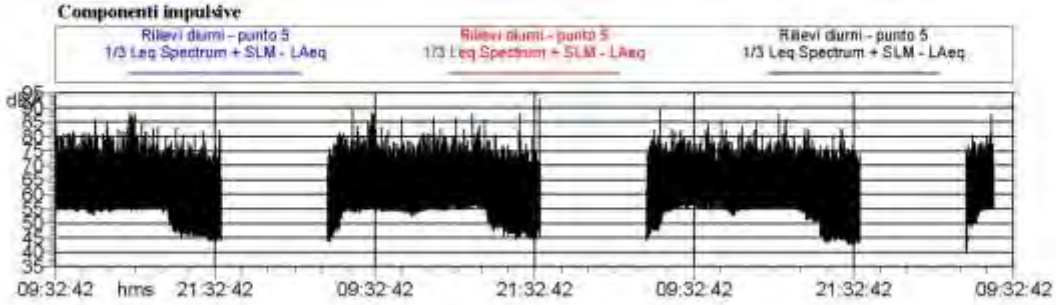
$L_{Aeq} = 64.8$ dB

Annotazioni: 05-06-07/11/2013 Sereno e assenza di vento

**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *09:32:42* | *46:29:48.500* | *64.8 dBA* |
| *Non Mascherato* | *09:32:42* | *46:29:48.500* | *64.8 dBA* |
| *Mascherato* | | *00:00:00* | *0.0 dBA* |

**Componenti impulsive**



# COMUNE DI OGGIONO

## Provincia di Lecco

P.zza Garibaldi, 14 23848 Oggiono (Lc)

## Scheda Rilievo n. 6

| | |
|---|---|
| Punto di Misura: | P6<br>Cascina Bergamina |
| Coordinate rilievo | |
| 526190,95 m E – 5069781,15 m N | |

| | |
|---|---|
| Data inizio rilievo | Data fine rilievo |
| 08/11/2013 | 09/11/2013 |
| Durata rilievo | 47061 s |
| Zonizzazione acustica vigente | Classe III |
| Zonizzazione acustica proposta | **Classe III** |

| Rilievo Diurno | | | | | | |
|---|---|---|---|---|---|---|
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **58,3** | 48,1 | 50,7 | 57,2 | 61,3 | 62,4 | 65,1 |

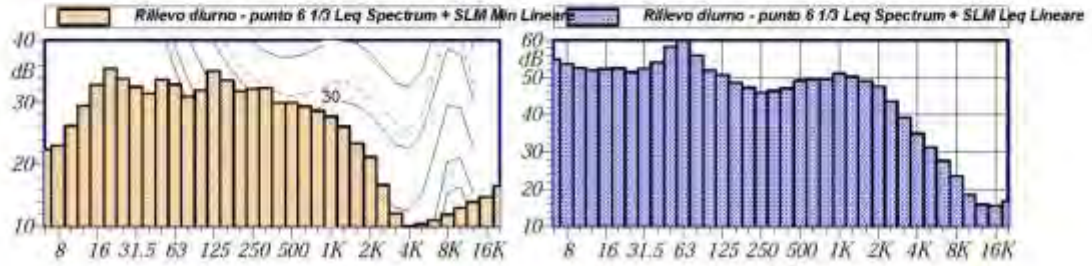
| Rilievo Notturno | | | | | | |
|---|---|---|---|---|---|---|
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **52,5** | 39,2 | 39,9 | 45,9 | 57,3 | 59,1 | 61,9 |

NOTE: Si ritiene di confermare la zonizzazione vigente.

| | |
|---|---|
| **Nome misura:** | **Rilievo diurno - punto 6** |
| **Località:** | **Rilievo P6** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **47061 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **08/11/2013 08:55:39** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievo diurno - punto 6
1/3 Leq Spectrum + SLM Leq Lineare

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 42.0 dB | 160 Hz | 49.6 dB | 2000 Hz | 47.6 dB |
| 16 Hz | 43.1 dB | 200 Hz | 47.3 dB | 2500 Hz | 44.9 dB |
| 20 Hz | 42.5 dB | 250 Hz | 48.0 dB | 3150 Hz | 39.1 dB |
| 25 Hz | 41.5 dB | 315 Hz | 48.4 dB | 4000 Hz | 34.9 dB |
| 31.5 Hz | 42.3 dB | 400 Hz | 47.0 dB | 5000 Hz | 31.2 dB |
| 40 Hz | 44.0 dB | 500 Hz | 49.1 dB | 6300 Hz | 27.6 dB |
| 50 Hz | 46.5 dB | 630 Hz | 49.5 dB | 8000 Hz | 23.5 dB |
| 63 Hz | 46.8 dB | 800 Hz | 49.6 dB | 10000 Hz | 19.5 dB |
| 80 Hz | 46.0 dB | 1000 Hz | 51.1 dB | 12500 Hz | 15.3 dB |
| 100 Hz | 45.0 dB | 1250 Hz | 50.2 dB | 16000 Hz | 15.5 dB |
| 125 Hz | 45.7 dB | 1600 Hz | 49.0 dB | 20000 Hz | 16.9 dB |




| | |
|---|---|
| L1: 65.1 dBA | L5: 62.4 dBA |
| L10: 61.3 dBA | L50: 57.2 dBA |
| L90: 50.7 dBA | L95: 48.1 dBA |

$L_{Aeq} = 58.3$ dB

Annotazioni: Sereno e assenza di vento

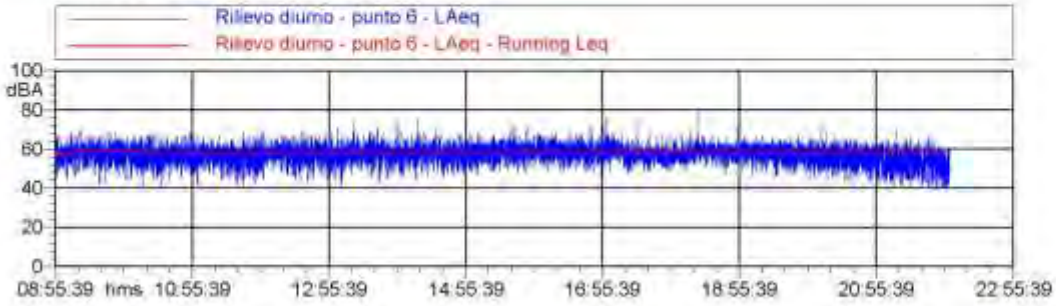
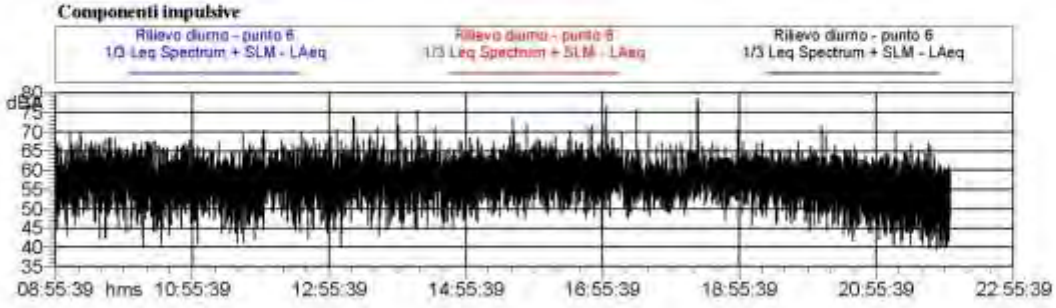



**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *08:55:39* | *13:04:21* | *58.3 dBA* |
| *Non Mascherato* | *08:55:39* | *13:04:21* | *58.3 dBA* |
| *Mascherato* | | *00:00:00* | *0.0 dBA* |

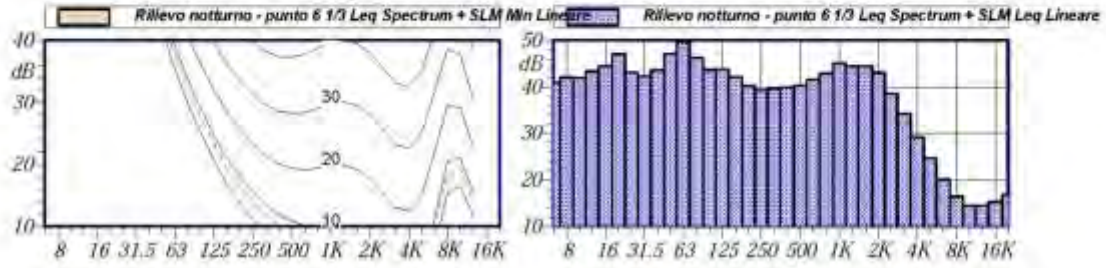
**Componenti impulsive**



| | |
|---|---|
| **Nome misura:** | **Rilievo notturno - punto 6** |
| **Località:** | **Rilievo P6** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **13352 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **08/11/2013 22:00:00** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievo notturno - punto 6
1/3 Leq Spectrum + SLM Leq Lineare

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 43.0 dB | 160 Hz | 42.1 dB | 2000 Hz | 43.0 dB |
| 16 Hz | 44.4 dB | 200 Hz | 40.1 dB | 2500 Hz | 38.6 dB |
| 20 Hz | 47.0 dB | 250 Hz | 39.2 dB | 3150 Hz | 34.2 dB |
| 25 Hz | 48.1 dB | 315 Hz | 39.5 dB | 4000 Hz | 29.1 dB |
| 31.5 Hz | 47.2 dB | 400 Hz | 39.9 dB | 5000 Hz | 24.7 dB |
| 40 Hz | 43.5 dB | 500 Hz | 40.3 dB | 6300 Hz | 20.1 dB |
| 50 Hz | 47.1 dB | 630 Hz | 41.6 dB | 8000 Hz | 16.4 dB |
| 63 Hz | 49.5 dB | 800 Hz | 42.8 dB | 10000 Hz | 14.8 dB |
| 80 Hz | 46.2 dB | 1000 Hz | 45.1 dB | 12500 Hz | 14.5 dB |
| 100 Hz | 43.7 dB | 1250 Hz | 44.5 dB | 16000 Hz | 15.2 dB |
| 125 Hz | 43.7 dB | 1600 Hz | 44.4 dB | 20000 Hz | 15.8 dB |




| | |
|---|---|
| L1: 61.9 dBA | L5: 59.1 dBA |
| L10: 57.3 dBA | L50: 45.9 dBA |
| L90: 39.9 dBA | L95: 39.2 dBA |

$L_{Aeq} = 52.5$ dB

Annotazioni: Sereno e assenza di vento

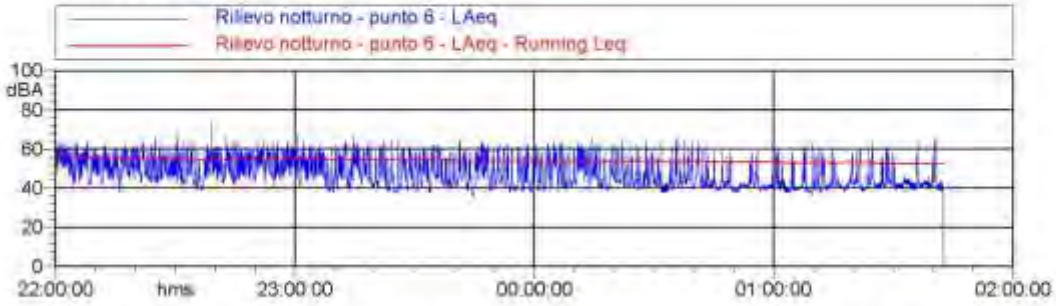
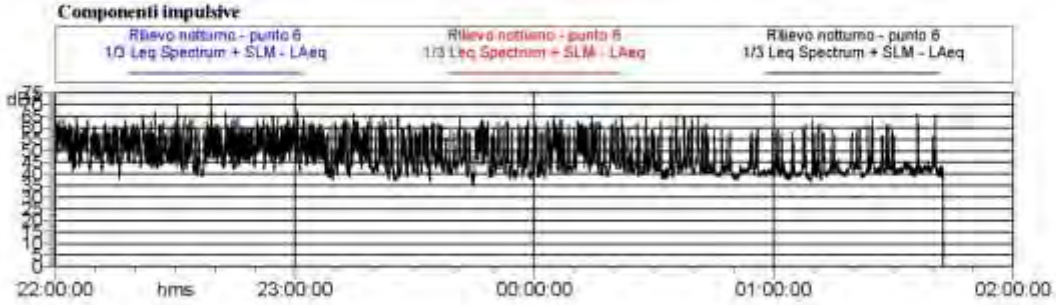



**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *22:00:00* | *03:42:32* | *52.5 dBA* |
| *Non Mascherato* | *22:00:00* | *03:42:32* | *52.5 dBA* |
| *Mascherato* | | *00:00:00* | *0.0 dBA* |

**Componenti impulsive**



# COMUNE DI OGGIONO
## Provincia di Lecco
P.zza Garibaldi, 14 23848 Oggiono (Lc)


## Scheda Rilievo n. 7

| | |
|---|---|
| Punto di Misura: | P7<br>Via per Annone, Lungo SP49 |
| Coordinate rilievo | |
| 524866,92 m E – 5069847,11 m N | |

| | |
|---|---|
| Data inizio rilievo | Data fine rilievo |
| 11/11/2013 | 12/11/2013 |
| Durata rilievo | 28801 s |
| Zonizzazione acustica vigente | Classe III |
| Zonizzazione acustica proposta | **Classe III** |

| Rilievo Diurno | | | | | | |
|---|---|---|---|---|---|---|
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **53,6** | 44,0 | 46,3 | 51,5 | 55,8 | 57,4 | 61,5 |

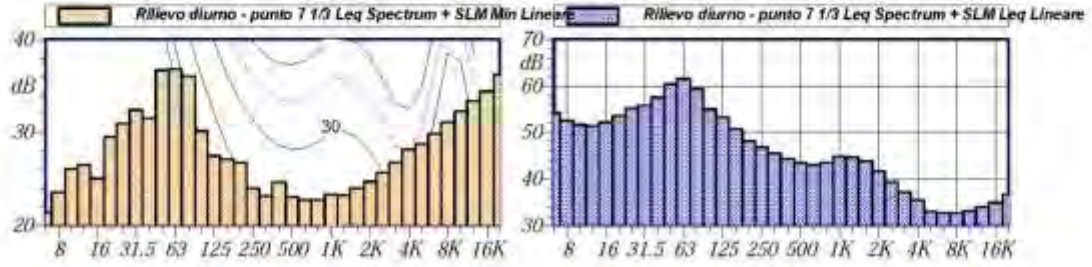
| Rilievo Notturno | | | | | | |
|---|---|---|---|---|---|---|
| LAeq | L95 | L90 | L50 | L10 | L5 | L1 |
| **46,8** | 28,9 | 29,6 | 37,6 | 50,1 | 52,1 | 56,1 |

NOTE: Si ritiene di confermare la zonizzazione vigente.

| | |
|---|---|
| **Nome misura:** | **Rilievo diurno - punto 7** |
| **Località:** | **Rilievo P7** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **80111 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **11/11/2013 10:13:36** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievo diurno - punto 7
1/3 Leq Spectrum + SLM Leq
Lineari

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 51.4 dB | 160 Hz | 50.7 dB | 2000 Hz | 41.7 dB |
| 16 Hz | 51.1 dB | 200 Hz | 49.2 dB | 2500 Hz | 39.1 dB |
| 20 Hz | 52.6 dB | 250 Hz | 49.7 dB | 3150 Hz | 37.1 dB |
| 25 Hz | 55.2 dB | 315 Hz | 45.5 dB | 4000 Hz | 35.4 dB |
| 31.5 Hz | 55.7 dB | 400 Hz | 44.2 dB | 5000 Hz | 32.9 dB |
| 40 Hz | 57.5 dB | 500 Hz | 45.4 dB | 6300 Hz | 32.6 dB |
| 50 Hz | 59.2 dB | 630 Hz | 48.0 dB | 8000 Hz | 32.6 dB |
| 63 Hz | 61.5 dB | 800 Hz | 49.5 dB | 10000 Hz | 33.1 dB |
| 80 Hz | 60.3 dB | 1000 Hz | 48.8 dB | 12500 Hz | 34.0 dB |
| 100 Hz | 54.9 dB | 1250 Hz | 44.6 dB | 16000 Hz | 34.9 dB |
| 125 Hz | 51.2 dB | 1600 Hz | 43.8 dB | 20000 Hz | 36.7 dB |




| | |
|---|---|
| L1: 61.5 dBA | L5: 57.4 dBA |
| L10: 55.8 dBA | L50: 51.5 dBA |
| L90: 46.3 dBA | L95: 44.0 dBA |

$L_{Aeq} = 53.6$ dB

Annotazioni: 11/11/2013 Sereno e assenza di vento

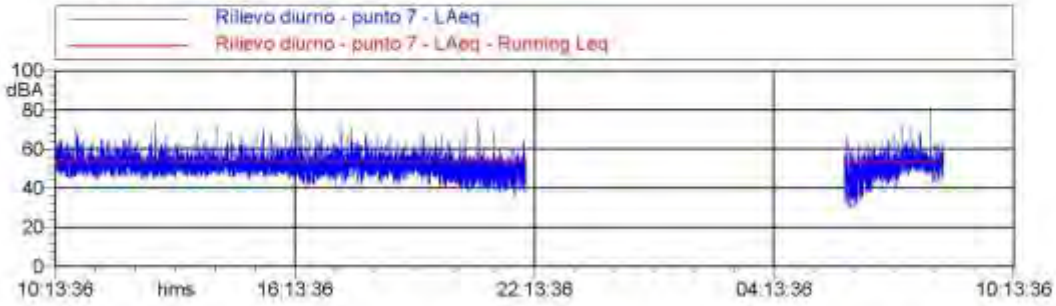
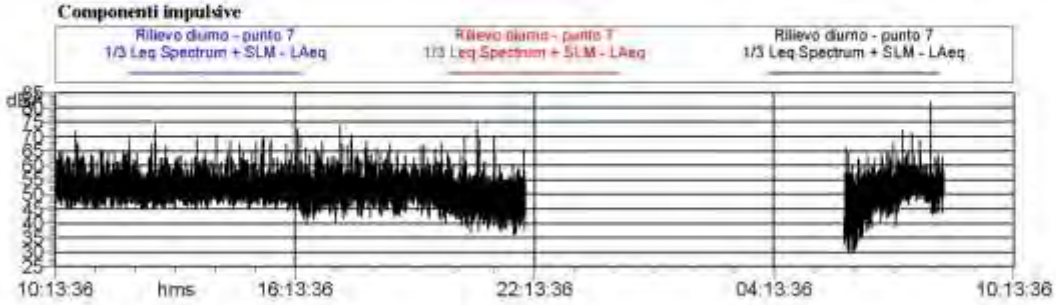



**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *10:13:36* | *14:15:11* | *53.6 dBA* |
| *Non Mascherato* | *10:13:36* | *14:15:11* | *53.6 dBA* |
| *Mascherato* | | *00:00:00* | *0.0 dBA* |

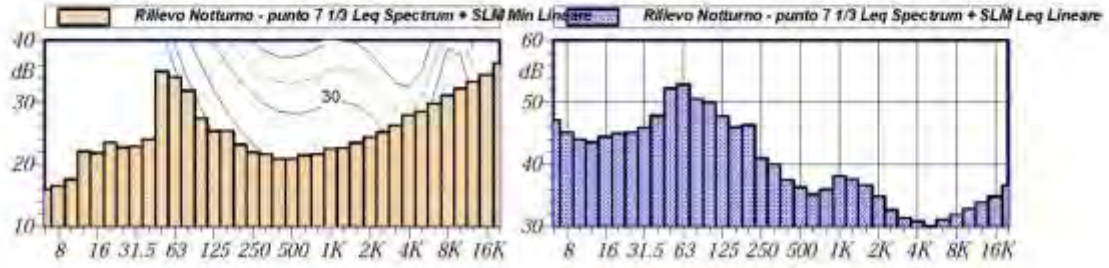
**Componenti impulsive**



| | |
|---|---|
| **Nome misura:** | **Rilievo Notturno - punto 7** |
| **Località:** | **Rilievo P7** |
| **Strumentazione:** | **831 0001861** |
| **Durata:** | **28801 (secondi)** |
| **Nome operatore:** | **Federico Bassani** |
| **Data, ora misura:** | **11/11/2013 22:00:00** |
| **Over SLM:** | **N/A** |
| **Over OBA:** | **N/A** |

Rilievo Notturno - punto 7
1/3 Leq Spectrum + SLM Leq Lineare

| | | | | | |
|---|---|---|---|---|---|
| 12.5 Hz | 43.6 dB | 160 Hz | 46.0 dB | 2000 Hz | 34.9 dB |
| 16 Hz | 44.4 dB | 200 Hz | 46.3 dB | 2500 Hz | 32.6 dB |
| 20 Hz | 45.0 dB | 250 Hz | 41.0 dB | 3150 Hz | 31.2 dB |
| 25 Hz | 45.2 dB | 315 Hz | 40.6 dB | 4000 Hz | 30.8 dB |
| 31.5 Hz | 45.9 dB | 400 Hz | 37.5 dB | 5000 Hz | 30.1 dB |
| 40 Hz | 47.5 dB | 500 Hz | 36.3 dB | 6300 Hz | 31.3 dB |
| 50 Hz | 51.2 dB | 630 Hz | 35.7 dB | 8000 Hz | 31.8 dB |
| 63 Hz | 52.8 dB | 800 Hz | 35.9 dB | 10000 Hz | 32.8 dB |
| 80 Hz | 51.5 dB | 1000 Hz | 36.1 dB | 12500 Hz | 33.6 dB |
| 100 Hz | 50.0 dB | 1250 Hz | 37.6 dB | 16000 Hz | 34.9 dB |
| 125 Hz | 47.7 dB | 1600 Hz | 39.6 dB | 20000 Hz | 35.6 dB |




| | |
|---|---|
| L1: 56.1 dBA | L5: 52.1 dBA |
| L10: 50.1 dBA | L50: 37.6 dBA |
| L90: 29.6 dBA | L95: 28.9 dBA |

$L_{Aeq}$ = 46.8 dB

Annotazioni: 05-06-07/11/2013 Sereno e assenza di vento

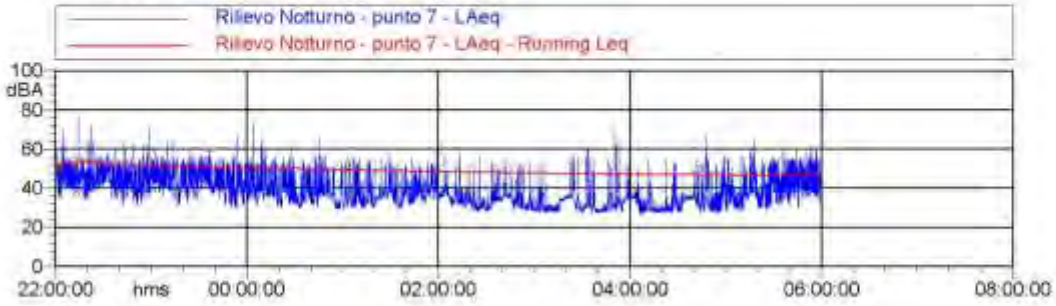
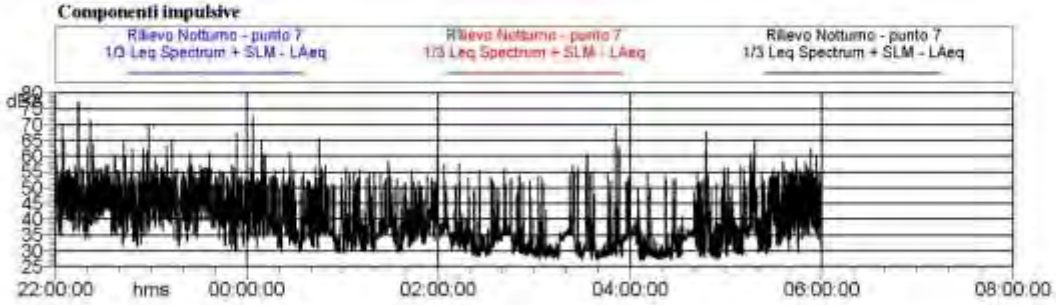



**Tabella Automatica delle Mascherature**

| Nome | Inizio | Durata | Leq |
|---|---|---|---|
| *Totale* | *22:00:00* | *08:00:00.500* | *46.8 dBA* |
| *Non Mascherato* | *22:00:00* | *08:00:00.500* | *46.8 dBA* |
| *Mascherato* | | *00:00:00* | *0.0 dBA* |

**Componenti impulsive**