

Technical Documentation

Microfono tipo 4191
per analizzatori portatili 2250 e 2270

Integrazione al Manuale d'istruzione BE 1732

Microfono tipo 4191 per analizzatori portatili tipo 2250 e 2270

dalla versione hardware 1.1

Integrazione al Manuale d'istruzione BE 1732

Considerazioni sulla sicurezza

Questo strumento è stato progettato e verificato in conformità alle richieste delle normative IEC 61010-1 e EN61010-1 *Requisiti di sicurezza degli apparecchi elettronici di misura, controllo ed uso in laboratorio*. Questo manuale contiene le informazioni e gli avvertimenti che devono essere seguiti dall'utente per garantire un funzionamento corretto dello strumento in completa sicurezza e per preservare lo strumento da eventuali danni.

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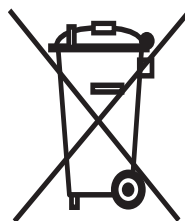
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- Nel caso che la strumentazione non funzioni correttamente o non funzioni in condizioni di sicurezza, scollegare la corrente, assicurandosi che non possa essere rimessa in funzione inavvertitamente.
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- È responsabilità civile contribuire alla conservazione dell'ambiente usando sistemi di raccolta differenziata
- Le sostanze pericolose presenti negli strumenti elettronici possono avere effetti nocivi sia sull'uomo che sull'ambiente
- Qualsiasi apparecchio che abbia questo simbolo deve essere trattato con un sistema di raccolta rifiuti differenziata
- La strumentazione elettrica ed elettronica non più utilizzabile deve essere riconsegnata al rappresentante locale o al quartier generale Brüel & Kjær in Danimarca per lo smaltimento

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Capitolo 1

Introduzione

1.1 Informazioni riguardanti questo testo integrativo

La combinazione tra il Microfono condensatore per campo libero da ½" **tipo 4191** e gli analizzatori portatili tipo 2250 e 2270 (di seguito al singolare 2250/2270) è intesa per livelli di pressione sonora alti e rende possibile la misura di picchi fino a **155 dB**.

Questo supplemento, insieme al Manuale d'istruzione per Analizzatori fonometrici portatili tipo 2250 e 2270 (BE 1732) ed al Manuale utente (BE 1721), è stato redatto per soddisfare i requisiti delle normative nazionali ed internazionali a cui il 2250/2270 si conforma. Queste normative sono elencate nella sezione 4.2 del Manuale d'istruzione.

Questo testo fornisce le informazioni **specifiche** riguardanti il Microfono tipo **4191**, quando usato insieme all'analizzatore portatile 2250/2270. Il Manuale d'istruzione fornisce il resto della documentazione richiesta, compreso le informazioni **comuni a tutti i microfoni**, i dati tecnici completi richiesti per le verifiche di conformità dei prodotti e le informazioni specifiche del microfono 4189.

Il numero dei capitoli, sezioni, figure e tabelle di questo testo integrativo corrispondono a quelle riportate nel Manuale d'istruzione, anche se queste informazioni vengono sostituite dalle informazioni relative al microfono 4191.

Nell'Appendice B del Manuale d'istruzione sono stati riportati i riferimenti incrociati tra i paragrafi specifici della normativa che richiedono documentazione e le sezioni corrispondenti presenti in questo testo, nel Manuale d'istruzione BE 1732 e nel Manuale utente BE 1721 che si conformano a questi.

Il Manuale utente contiene un riassunto delle caratteristiche tecniche più importanti, necessarie per l'utilizzo dello strumento. Nell'eventualità si dovessero riscontrare delle incoerenze tra il Manuale utente ed il Manuale d'istruzione, quest'ultimo e questo testo integrativo avranno la precedenza.

1.1.1 Convenzioni usate in questo testo integrativo

Differenze tra il testo integrativo ed il Manuale d'istruzione

Indicate con caratteri in grassetto per evidenziare le differenze tra questo testo ed il Manuale d'istruzione.

Opzioni dei menu e pulsanti/tabulatori usati sullo schermo

Indicati con caratteri in grassetto (per esempio, come il tabulatore **Dettagli** nella finestra **Calibrazione**).

Testi dei parametri come indicati sullo schermo

I parametri, le istruzioni e le descrizioni che appaiono sullo schermo sono indicati con caratteri in corsivo (per esempio, *Modo Misura*).

1.2.3 Regolazione dell'hardware

Questo paragrafo descrive i componenti hardware usati con l'analizzatore portatile 2250/2270.

Nella Fig. 1.1 del Manuale d'istruzione sono mostrati i componenti dello strumento e gli accessori opzionali sono indicati all'interno del riquadro.

Nella tabella 1.1 di seguito sono elencati i componenti necessari per le verifiche di conformità del 2250/2270 **insieme al microfono 4191**

Si prega di notare che il microfono 4191 non viene specificato insieme al Kit per microfono da esterni UA-1404.

Tabella 1.1
Componenti
necessari per le
verifiche di
conformità del
2250/2270

Quantità	Nr. parte/tipo Brüel & Kjær	Descrizione
1 o 2 ^a	Tipo 4191	Microfono condensatore a campo libero da ½"
1 o 2 ^a	ZC-0032	Preamplificatore microfono
1 o 2 ^a	WA-0302-B	Sostituto elettrico per microfono tipo 4191, 18 pF
1 o 2 ^a	UA-0245	Adattatore da 10-32 UNF a BNC
1	UA-1650	Schermo antivento da 90 mm con autorilevamento
1	UA-1651	Estensione treppiede per analizzatore portatile
1	UA-1317	Portamicrofono
1 o 2 ^a	AO-0697-D-100	Cavo estensione microfono, schermato, LEMO 10-pin, 10 m
1 ^a	JP-1041	Adattatore bicanale da 10 poli, schermato, LEMO 10-pin
3 o 4 ^a	AO-0440-D-015	Cavo segnale, schermato, da LEMO triassiale a BNC, 1.5 m
1	AO-1476	Cavo interfaccia USB, schermato, 1.8 m
1 ^a	AO-1449-D-010	Cavo interfaccia LAN, incrociato, schermato, 1.0 m
1 ^a	AO-1450	Cavo interfaccia LAN, schermato, 1.5 m
1	HT-0015	Auricolari
1	ZG-0426	Alimentatore alla rete, 12 V DC, cavo schermato
1	QB-0061	Pacchetto batterie ricaricabili
1	UL-1009	Scheda memoria grado industriale per analizzatori portatili
1	Tipo 4231	Calibratore di livello sonoro
1	Tipo 4226	Calibratore acustico multifunzione

a. Solo per il 2270.

Capitolo 2

Informazioni richieste dalle normative

2.1 Introduzione

Questo capitolo contiene tutte le informazioni dettagliate richieste dalle normative che devono essere inserite nel Manuale d'istruzione.

Usando il microfono tipo 4191 insieme all'analizzatore portatile 2250/2270 non viene richiesta nessun'altra informazione da dover aggiungere al Capitolo 2 del Manuale d'istruzione.

Capitolo 3

Verifiche di conformità

3.1 Introduzione

Questo capitolo contiene le informazioni necessarie per condurre le verifiche di conformità in accordo alle normative specifiche.

3.5 Sostituto elettrico per microfoni

Per ottenere un ingresso elettrico del tipo BNC, occorre sostituire il microfono con un **18 pF WA 0302 – C** montato con un adattatore da 10–32 UNF a BNC, UA-0245.

Questo sostituto elettrico per microfoni ha (insieme al preamplificatore) un'attenuazione nominale di **0.55 dB**.

L'ingresso elettrico ottenuto in questo modo avrà un livello d'ingresso massimo di $\pm 15.07 V_{\text{picco}}$ e non si verificheranno danni in caso di segnali fino a $\pm 20 V_{\text{picco}}$.

Per la verifica, tutti gli ingressi elettrici possono essere sottoposti a corto circuito.

Per calibrare il 2250/2270, per la verifica di conformità elettrica dello strumento, con una calibrazione che corrisponde alla calibrazione che si otterrebbe se il 2250/2270 fosse montato con un microfono di sensibilità nominale a circuito aperto, procedere nel seguente modo:

- 1) nella finestra **Setup (Completa)**:
 - Impostare *Ingresso, Trasd. usato* sul microfono che si desidera sostituire
 - Impostare *Ingresso, Ingresso* su *Presa top*
- 2) calibrare il 2250/2270 digitando la sensibilità nominale come *Sensibilità* nella finestra **Calibrazione**. Per il microfono **4191**, la sensibilità nominale è la sensibilità a circuito aperto del microfono (**12.50 mV/Pa**), attenuata dall'attenuazione nominale del preamplificatore microfono ZC-0032 (**0.20 dB**), che si paragona a **12.22 mV/Pa**. NON premere il tasto **Avvio calibrazione**.
- 3) collegare un segnale sinusoidale elettrico con una frequenza di 1 kHz al sostituto elettrico per microfoni e correggere l'ampiezza di questo segnale fino a che LZF (o LCF) non visualizza 94.00 dB nella finestra **Calibrazione**. Questa ampiezza elettrica è il riferimento di 94.00 dB per le verifiche elettriche. L'ampiezza sarà di norma **13.1 mV**., dovuto all'attenuazione del sostituto elettrico per microfoni (nominale di **0.55 dB**).

Salvo richiesta contraria, le verifiche elettriche in accordo alla normativa IEC 60651 devono essere eseguite con il parametro di misura L_p (Pressione sonora istantanea ponderata nel tempo): particolare importante per le misure di linearità del livello a livelli bassi.

Capitolo 4

Dati tecnici

4.1 Caratteristiche tecniche

Le caratteristiche tecniche sono relative alla configurazione descritta in dettaglio nel Capitolo 1.

Altrimenti specificato, i dati tecnici sono riferibili come dati tipici in “Condizioni ambientali di riferimento e con il sistema calibrato con una sensibilità nominale a circuito aperto del microfono.

Nota: le specifiche indicate di seguito per la ponderazione Z, come definita nella normativa IEC 61672-1, sono valide anche per la risposta Lin, come definita nella normativa IEC 60651.

4.5 Microfono

Microfono **4191** e preamplificatore ZC-0032:

Tipo: microfono condensatore a campo libero da $\frac{1}{2}$ ”

Tensione di polarizzazione: esterna 200 V

Sensibilità nominale a circuito aperto: 12.5 mV/Pa, (corrispondente a -38 dB rif 1 V/Pa) ± 1.5 dB

Capacità: 18 pF (a 250 Hz)

Attenuazione nominale preamplificatore: 0.2 dB

Cavi estensione tra preamplificatore ZC-0032 e tipo 2250/2270: fino a 100 m senza influenzare le specifiche. **Nota:** verifica EMC solo con cavo da 10 m (AO-0697-D-100)

Punto riferimento del microfono: il centro della superficie frontale della griglia di protezione del microfono.

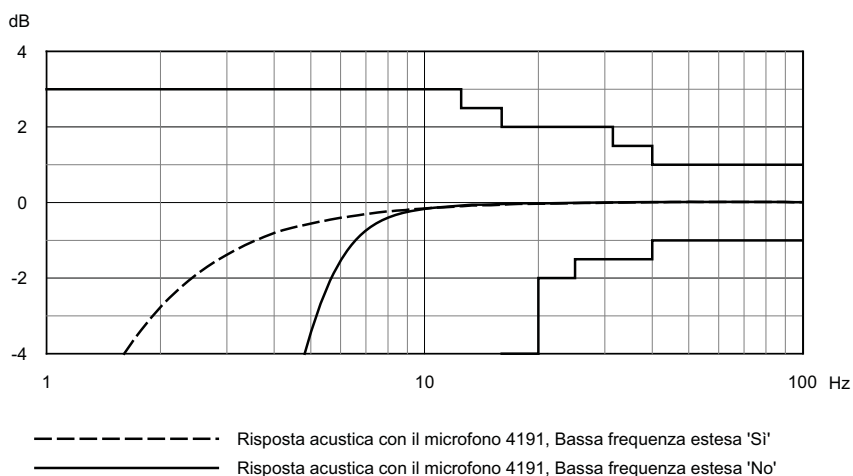
Direzione di riferimento dell'incidenza sonora: si vedano i segni nell'angolo destro in basso dei grafici sulla risposta direzionale, nella sezione 4.7.

4.6.2 Risposte tipiche alle basse frequenza

Le risposte tipiche alle basse frequenze per una ponderazione in frequenza Z sono riportate nella Fig. 4.2. **Per la risposta elettrica della presa posteriore ‘Ingresso’, riferirsi alla sezione 4.6.2 del Manuale d'istruzione.** Le risposte acustiche includono il microfono **4191** ed il preamplificatore microfono ZC-0032.

Le risposte alle basse frequenze dipendono dalla regolazione del parametro *Bassa freq. estesa*, nella finestra **Setup**, in *Ingresso* e non vengono influenzate dalla presenza di accessori del microfono, descritti nella sezione 1.2.3, e nemmeno dalla compensazione della risposta in frequenza.

Le risposte alla bassa frequenza per l'introduzione del segnale, attraverso il mezzo raccomandato per sostituire il microfono con un dispositivo d'ingresso elettrico (si veda la sezione 3.5) differiscono dalle risposte ai campi elettrici mostrate nella Fig. 4.2 **del Manuale d'istruzione** perché includono il preamplificatore ZC-0032.

Fig.4.2 Risposte tipiche alle basse frequenze

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4.6.4 Risposte in frequenza acustiche

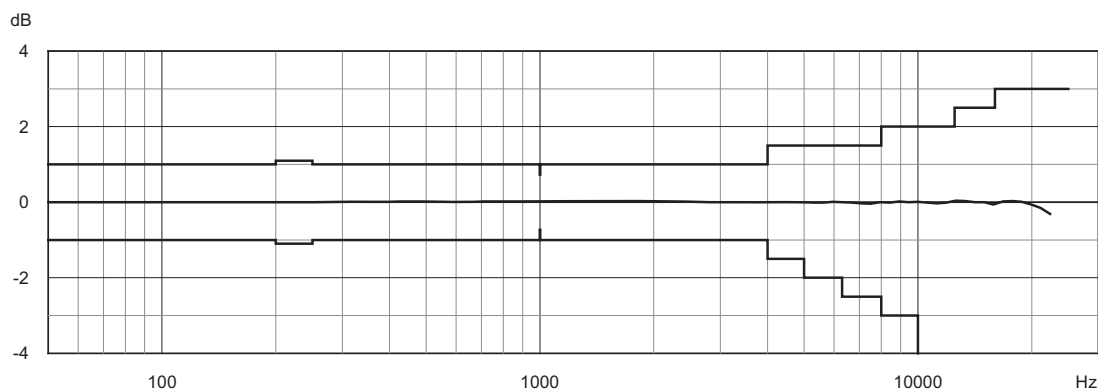
Tutte le risposte in frequenza acustiche sono date come ponderate Z.

Le risposte in frequenza acustiche ponderate A, B e C possono essere calcolate aggiungendo la risposta corrispondente delle colonne “Aggiungi alle risposte acustiche” della tabella A.1 (**si veda l'Appendice A nel Manuale d'istruzione**) alle risposte ponderate Z.

4.6.5 Risposte in frequenza in campo libero

Dalla Fig.4.3 alla Fig.4.7 e dalla tabella A.2 alla tabella A.5. sono raffigurate le risposte in frequenza in campo libero per onde sonore sinusoidali progressive piane provenienti dalla direzione di riferimento con ponderazione in frequenza Z. Le tabelle riportano inoltre le ‘incertezze estese della misura’ richieste dalla normativa IEC 61672-1, si veda l'inizio della sezione 4.6 **del Manuale d'istruzione**.

Fig.4.3 Risposta in frequenza in campo libero di 0° per microfono 4191, preamplificatore microfono ZC-0032 e per la risposta ai campi elettrici del 2250/2270, con preamplificatore collegato ad un cavo d'estensione. Corrisponde alla colonna “Risposta acustica” della tabella A.2



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Fig.4.4 Influenza del 2250/2270 sulla risposta a campo libero di 0°; corrisponde alla colonna "Influenza strumento" della tabella A.3

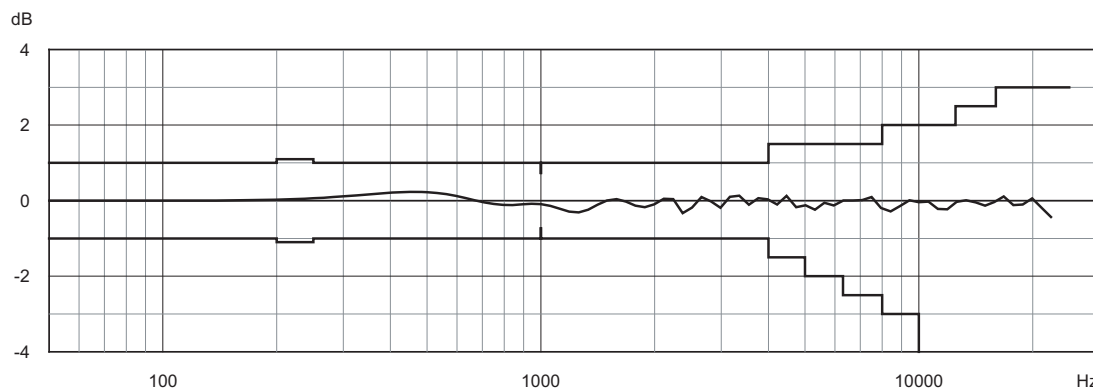


Fig.4.5 Risposta in frequenza in campo libero di 0° per microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con il preamplificatore montato direttamente sullo strumento. Corrisponde alla colonna "Risposta acustica" della tabella A.3

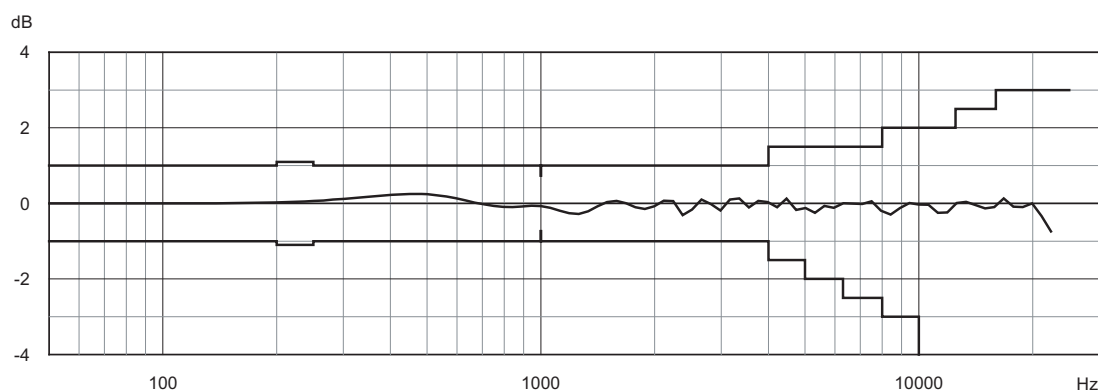


Fig.4.6 Risposta in frequenza in campo libero di 0° per schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 e per la risposta ai campi elettrici del 2250/2270, con preamplificatore collegato ad un cavo d'estensione. Corrisponde alla colonna "Risposta acustica" della tabella A.4

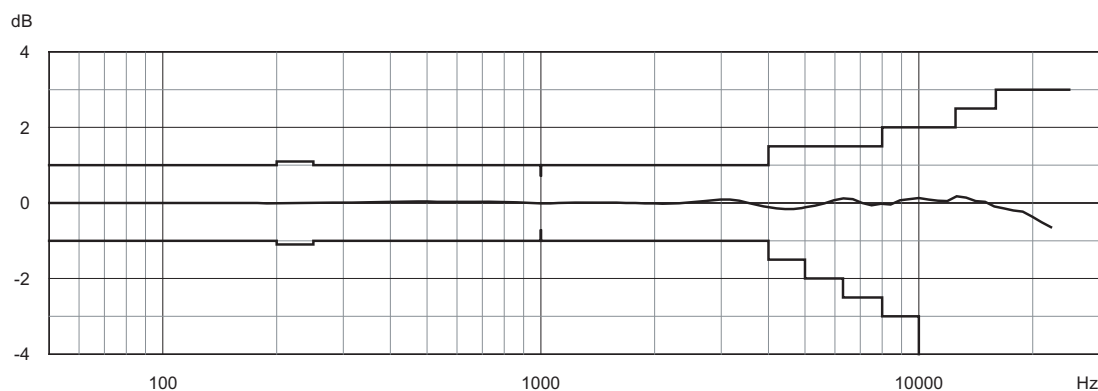


Fig.4.7 Risposta in frequenza in campo libero di 0° per schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento. Corrisponde alla colonna "Risposta acustica" della tabella A.5

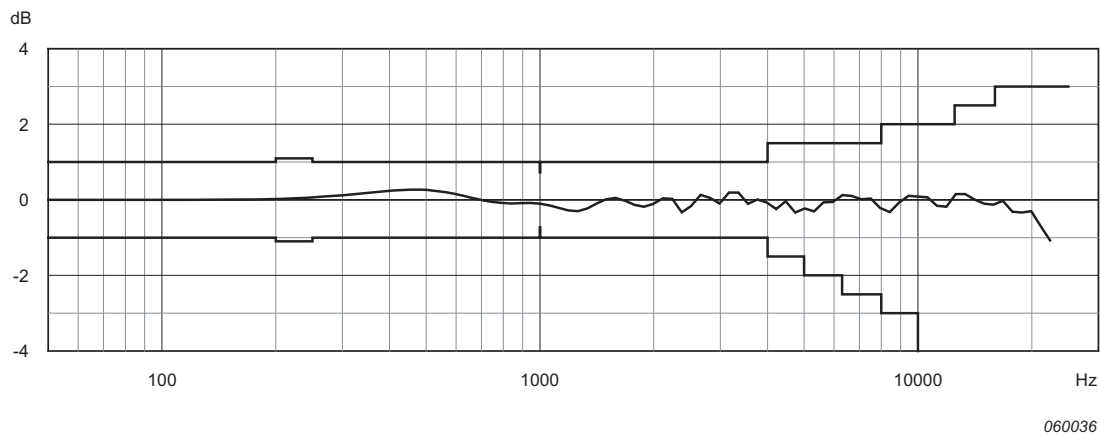


Fig.4.8 Il microfono 4191 non ha specifiche con il kit per microfono da esterni UA-1404

4.6.6 Risposte in frequenza in campo diffuso

Nelle Fig.4.2 e Fig.4.3 e nelle tabelle A.7 e A.8 sono raffigurate le risposte in frequenza in campo diffuso (chiamate anche risposte in frequenza ad incidenza casuale) con ponderazione in frequenza Z.

L'influenza che ha lo strumento in un campo diffuso è così minima che le risposte in frequenza in campo diffuso sono le stesse sia con o senza il preamplificatore collegato ad un cavo d'estensione.

Fig.4.2 Risposta in campo diffuso per il microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270 con o senza il preamplificatore collegato ad una cavo d'estensione. Corrisponde alla colonna "Risposta acustica" della tabella A.7

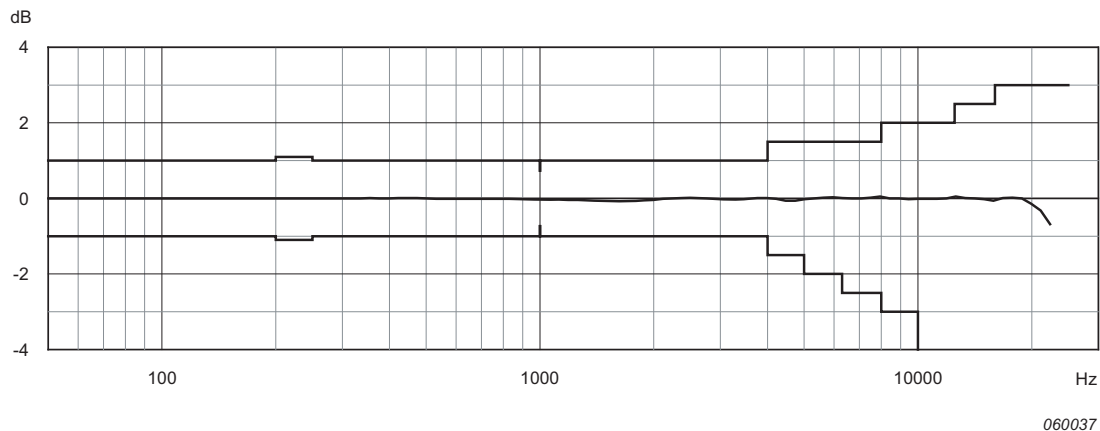


Fig.4.3 Risposta in frequenza in campo diffuso per schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 e 2250/2270, con o senza il preamplificatore collegato ad una cavo d'estensione. Corrisponde alla colonna "Risposta acustica" della tabella A.8

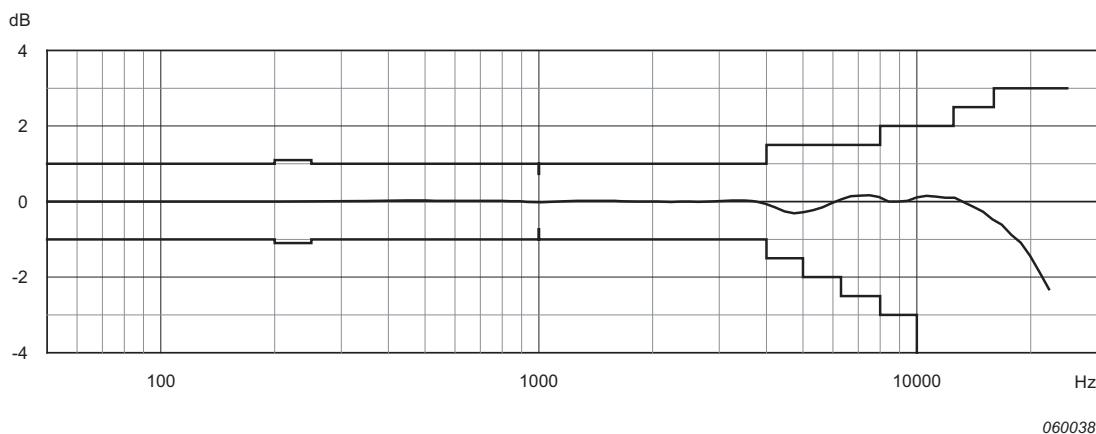


Fig.4.4 Il microfono 4191 non ha specifiche con il kit per microfono da esterni UA-1404

4.6.7 Risposte in frequenza in campo libero per strumenti calibrati in campo diffuso

In accordo alle normative IEC 60651 e IEC 60804, le risposte in frequenza in campo libero nella direzione di riferimento per strumenti calibrati in campo diffuso devono essere specificate; queste risposte sono riportate nella tabella A.10.

4.7 Risposte direzionali

Questa sezione fornisce le risposte direzionali per onde sonore sinusoidali progressive piane normalizzate alla risposta nella direzione di riferimento. L'influenza della presenza dello strumento e degli accessori sulle risposte direzionali è riportata in forma di tabelle nell'Appendice A. Le risposte direzionali risultanti sono state riportate in questa sezione solo in forma di grafico.

I grafici della variazione di sensibilità mostrano la differenza massima assoluta tra le sensibilità in qualsiasi dei due angoli d'incidenza sonora, entro un'intervallo specifico di angoli. Ad esempio, ad ogni frequenza il valore per $\pm 30^\circ$ è la differenza tra la sensibilità più alta e quella più bassa trovata in un cono circolare con un angolo di apertura di 60° , in alto rispetto alla posizione del microfono e con la direzione di riferimento d'incidenza come l'asse. Poiché l'intervallo dell'angolo definisce una forma geometrica tridimensionale, si presenta solo un set di grafici con le variazioni di sensibilità, anche dove la risposta direzionale viene mostrata come due piani. I grafici indicano la variazione massima per i due piani combinati. Le variazioni di sensibilità sono riportate in forma di tabelle nell'Appendice A.

Nelle seguenti sezioni, nei grafici relativi alle variazioni di sensibilità, sono state riportate le curve limite che rappresentano i limiti dati dalla normativa IEC 61672-1, ridotti dell'incertezze estese massime della misura ripresi dall'Appendice A della IEC 61672-1. Queste incertezze sono quelle massime che un laboratorio di collaudo potrebbe rilevare nelle proprie misure durante le verifiche di conformità, in accordo alla IEC 61672.

Fig.4.12 Risposta direzionale per microfono 4191 e preamplificatore microfono ZC-0032, con il preamplificatore collegato ad un cavo d'estensione. Corrisponde alle tabelle dalla A.11 alla A.13

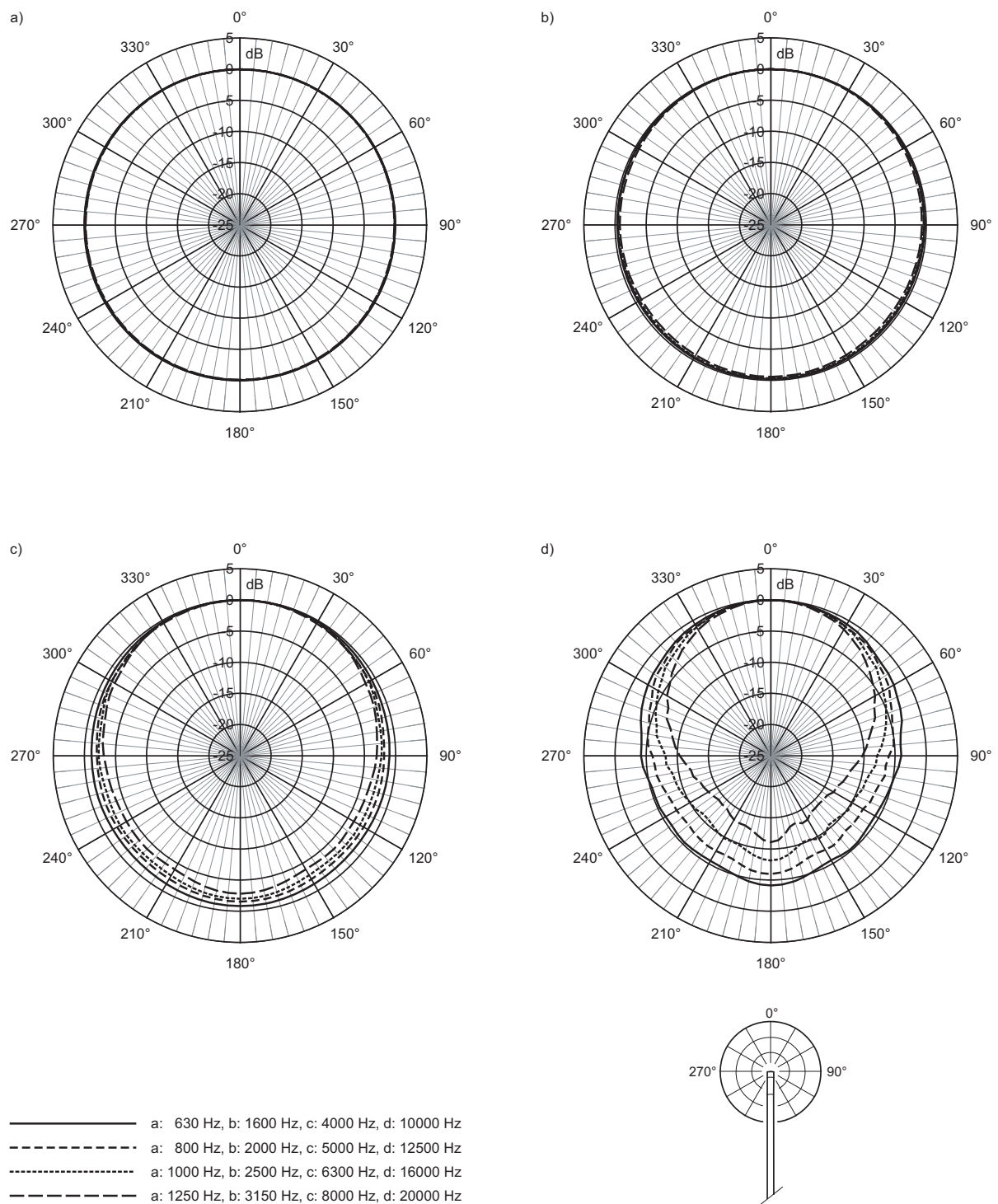


Fig.4.13 Variazioni della sensibilità per microfono 4191 e preamplificatore microfono ZC-0032, con il preamplificatore collegato ad un cavo d'estensione, agli angoli d'incidenza sonora compresi tra $\pm\theta^\circ$ dalla direzione di riferimento. Corrisponde alla tabella A.14

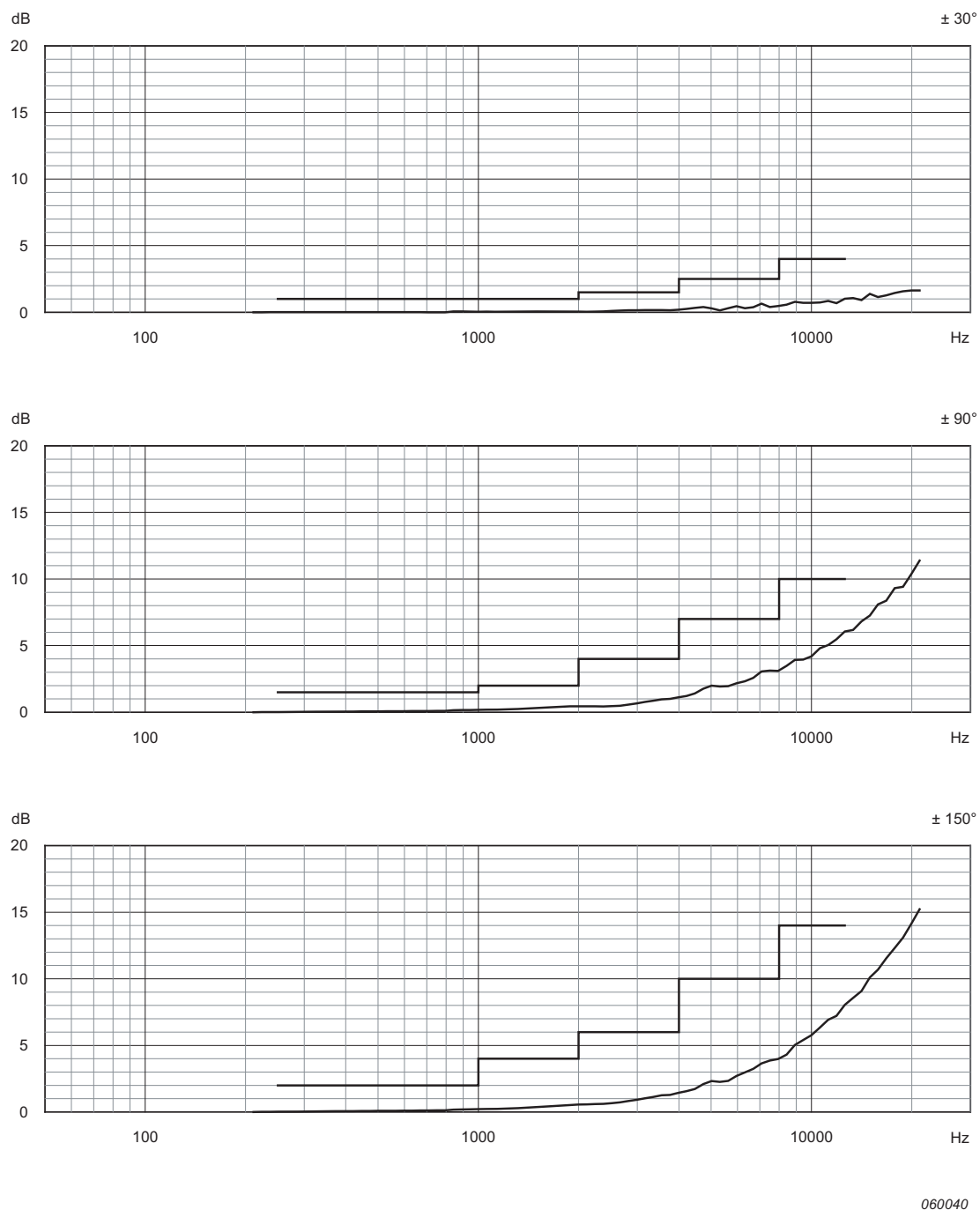


Fig.4.14 Risposta direzionale per microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurata in un piano parallelo al display dell'analizzatore e lungo l'asse del microfono. Corrisponde alle tabelle dalla A.21 alla A.23

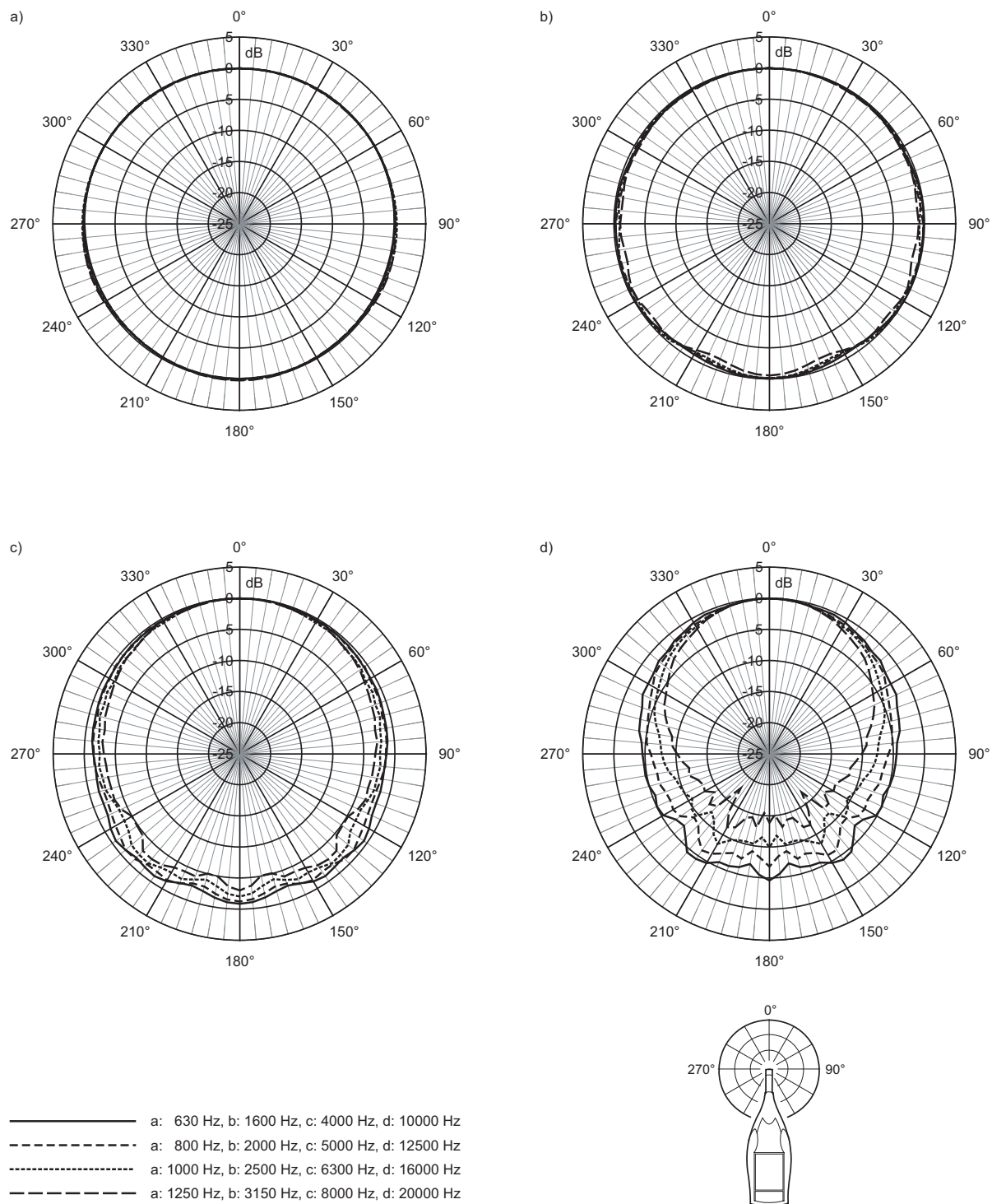


Fig.4.15 Risposta direzionale per microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurata in un piano perpendicolare al display e lungo l'asse del microfono. Corrisponde alle tabelle dalla A.24 alla A.26

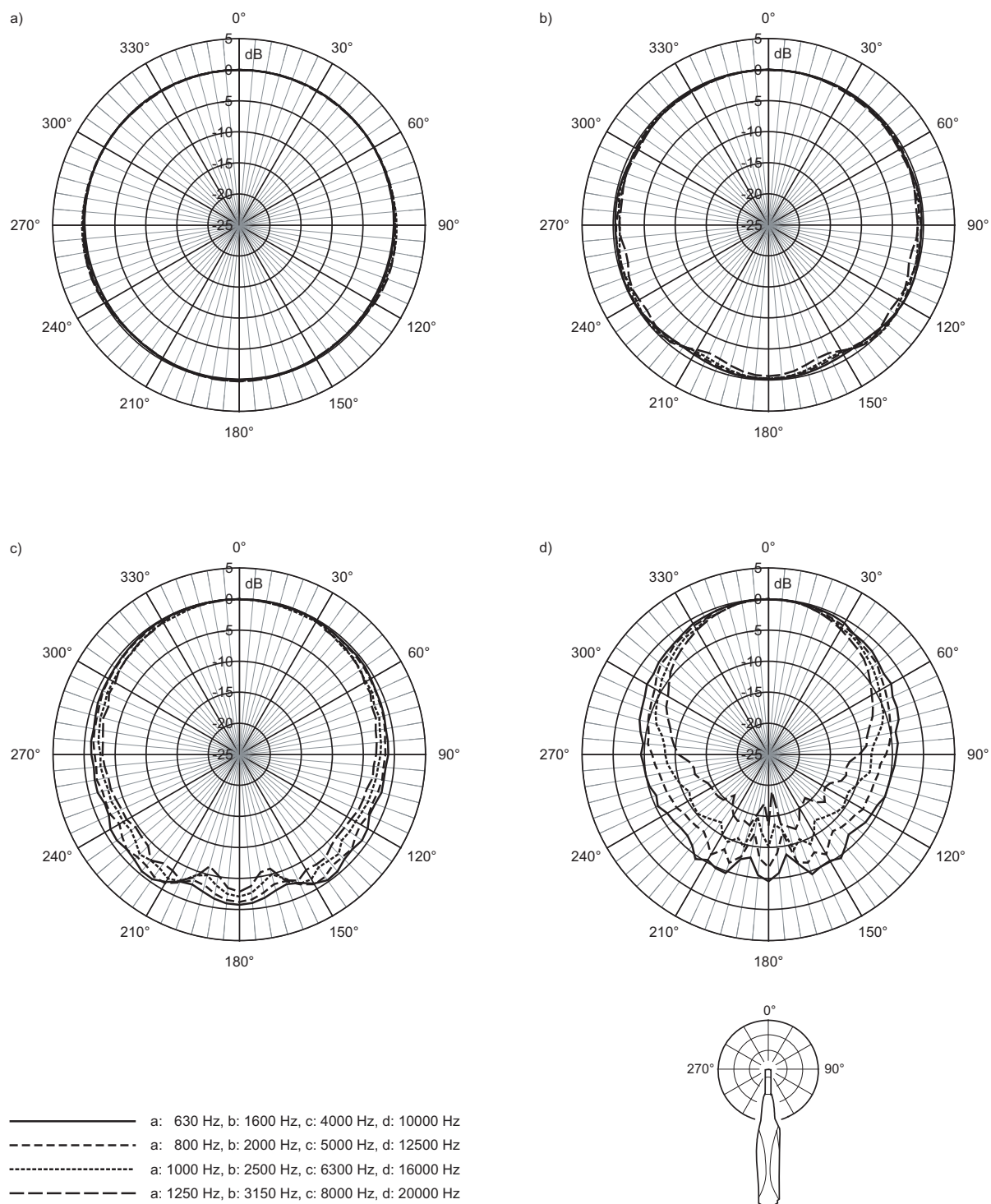
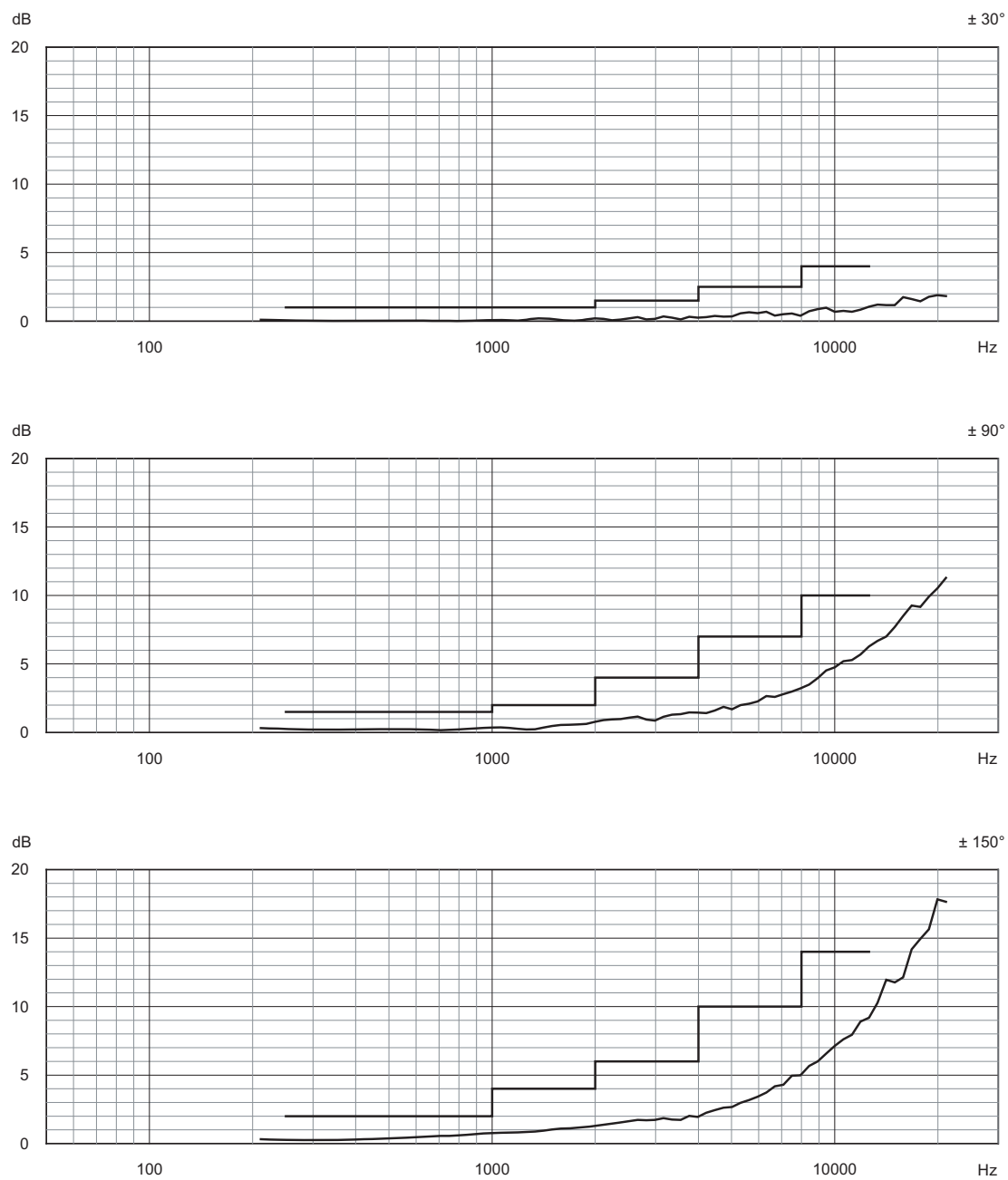


Fig.4.16 Variazioni della sensibilità per microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270 con preamplificatore montato direttamente sullo strumento, agli angoli d'incidenza sonora compresi tra $\pm\theta^\circ$ dalla direzione di riferimento. Corrisponde alla tabella A.27



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Fig.4.17 Risposta direzionale per schermo antivento UA-1650, microfono 4191 e preamplificatore microfono ZC-0032, con preamplificatore collegato ad un cavo d'estensione. Corrisponde alle tabelle dalla A.31 alla A.33

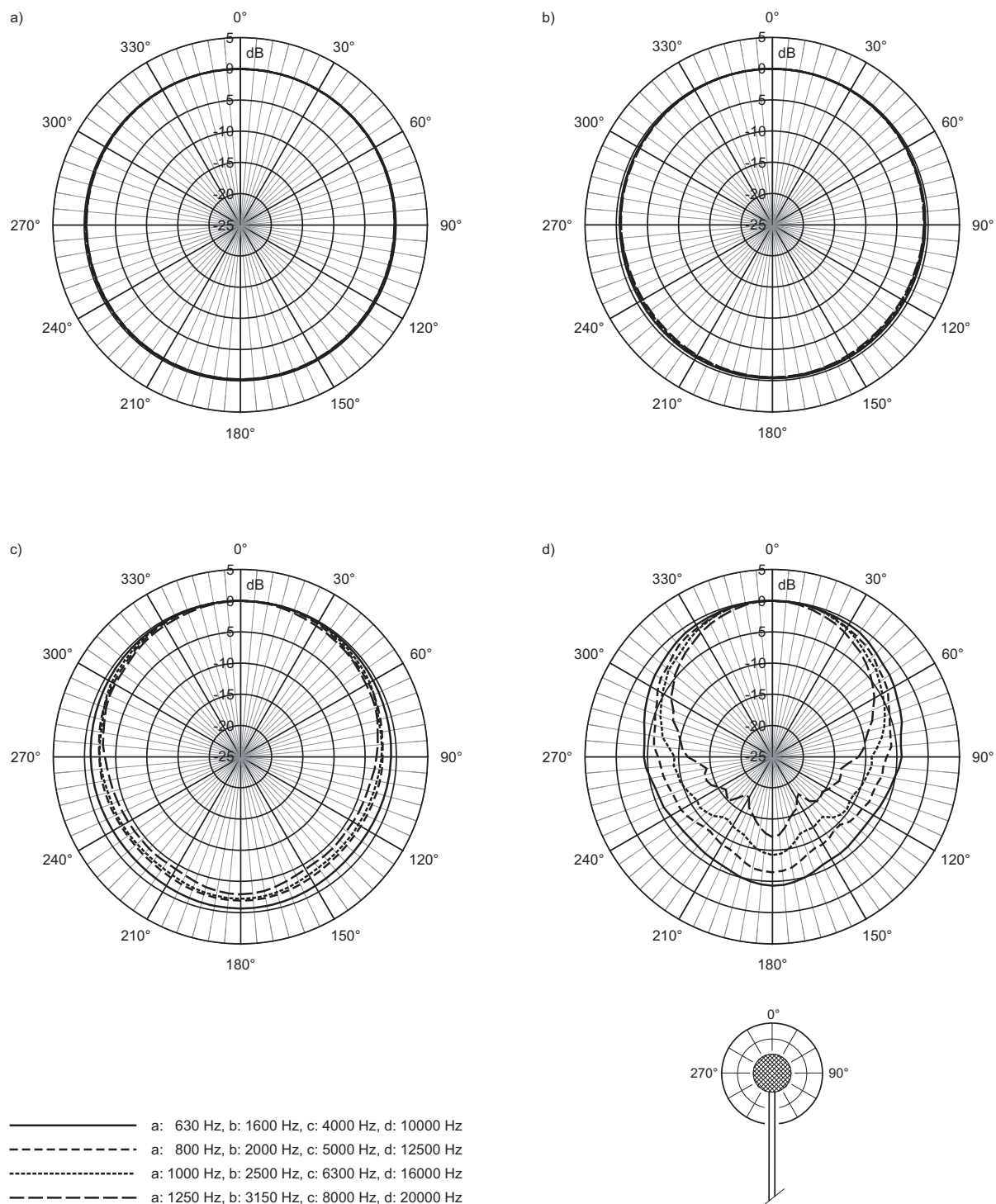
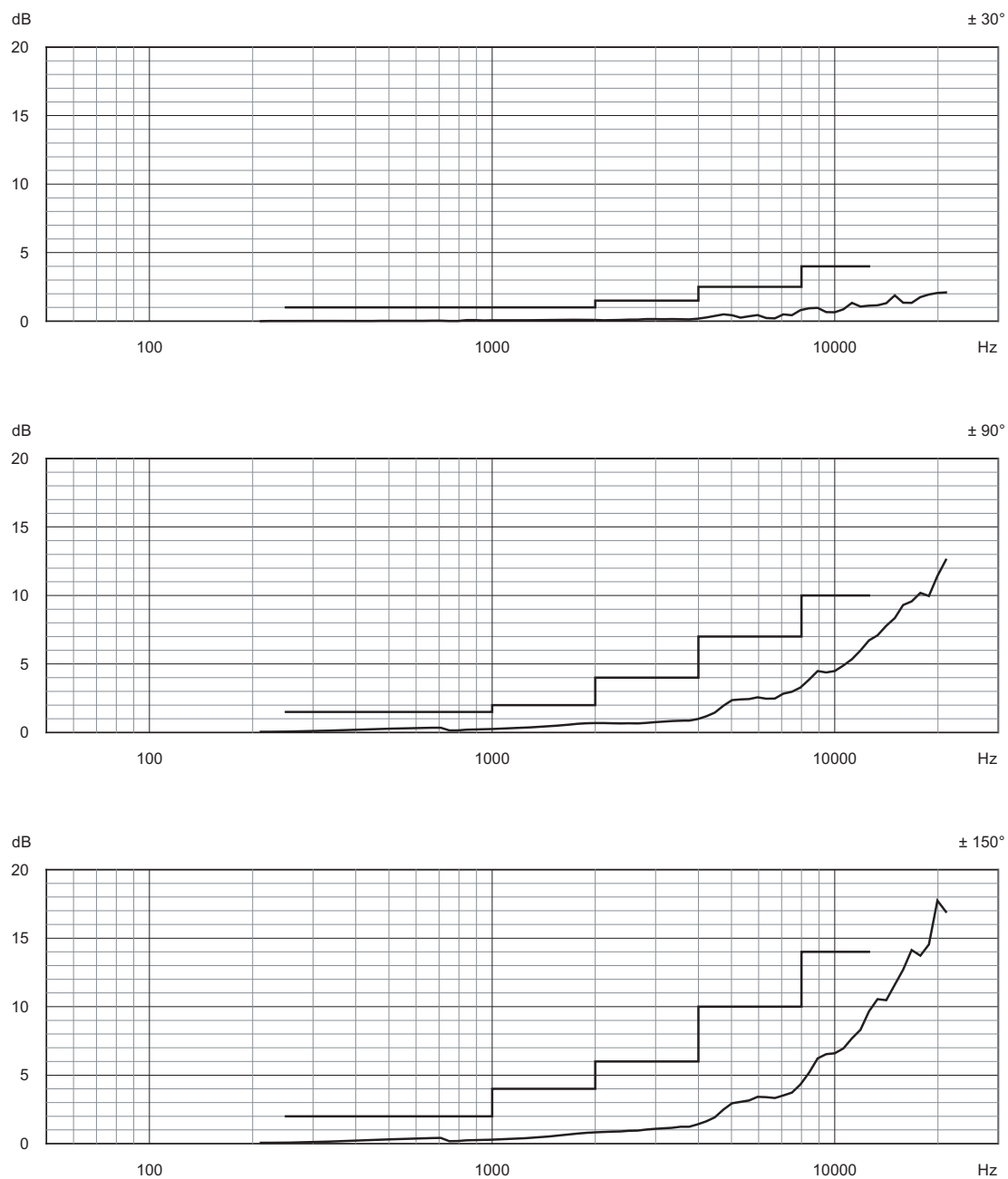


Fig.4.18 Variazioni della sensibilità per schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 con preamplificatore collegato ad un cavo d'estensione, agli angoli d'incidenza sonora compresi tra $\pm\theta^\circ$ dalla direzione di riferimento. Corrisponde alla tabella A.34



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Fig.4.19 Risposta direzionale per schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 e analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurata in un piano parallelo al display dell'analizzatore e lungo l'asse del microfono. Corrisponde alle tabelle dalla A.35 alla A.37

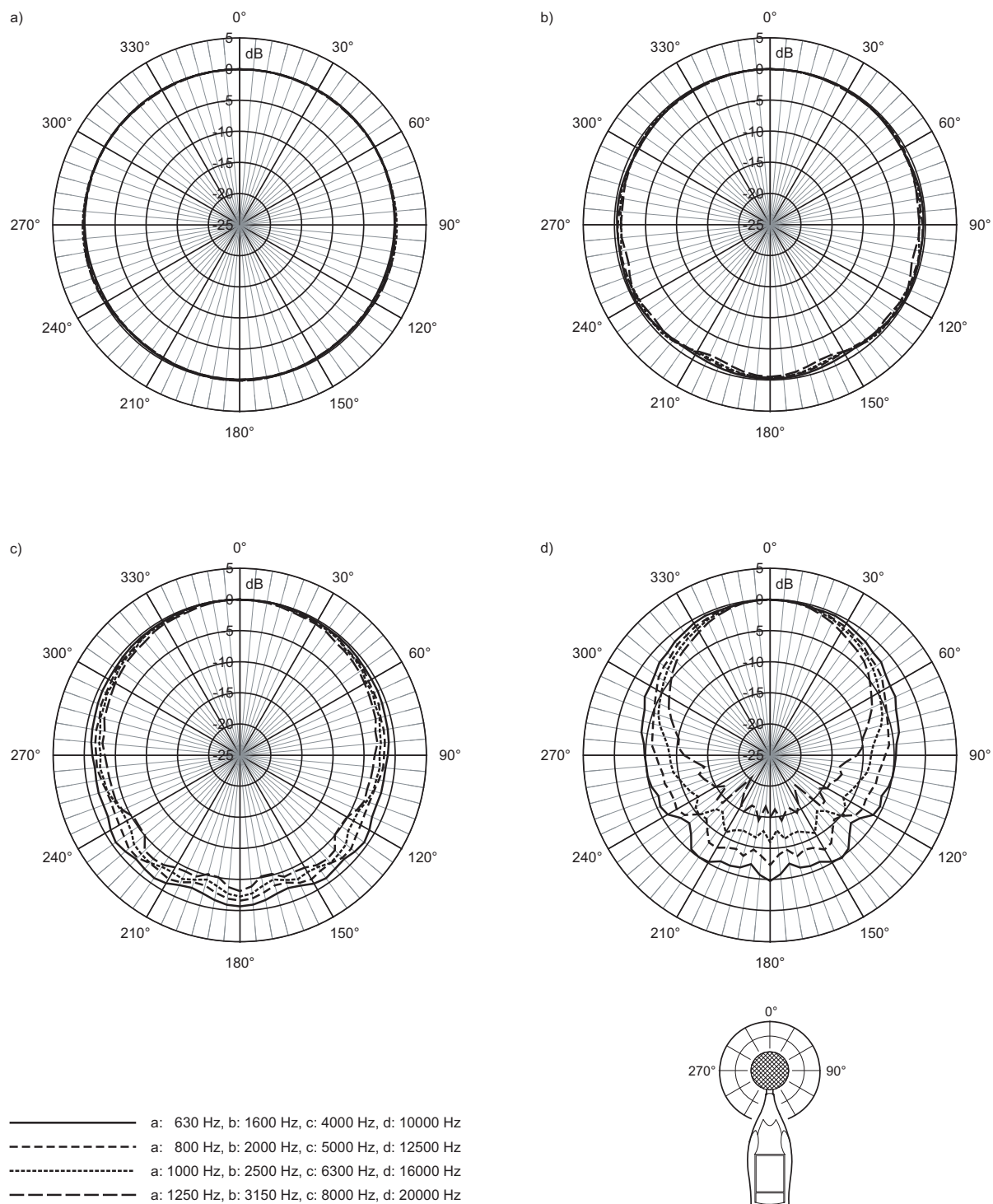


Fig.4.20 Risposta direzionale per schermo antivento UA-1650, microfono 4191, prolificamente microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurata in un piano perpendicolare al display e lungo l'asse del microfono. Corrisponde alle tabelle dalla A.38 alla A.40

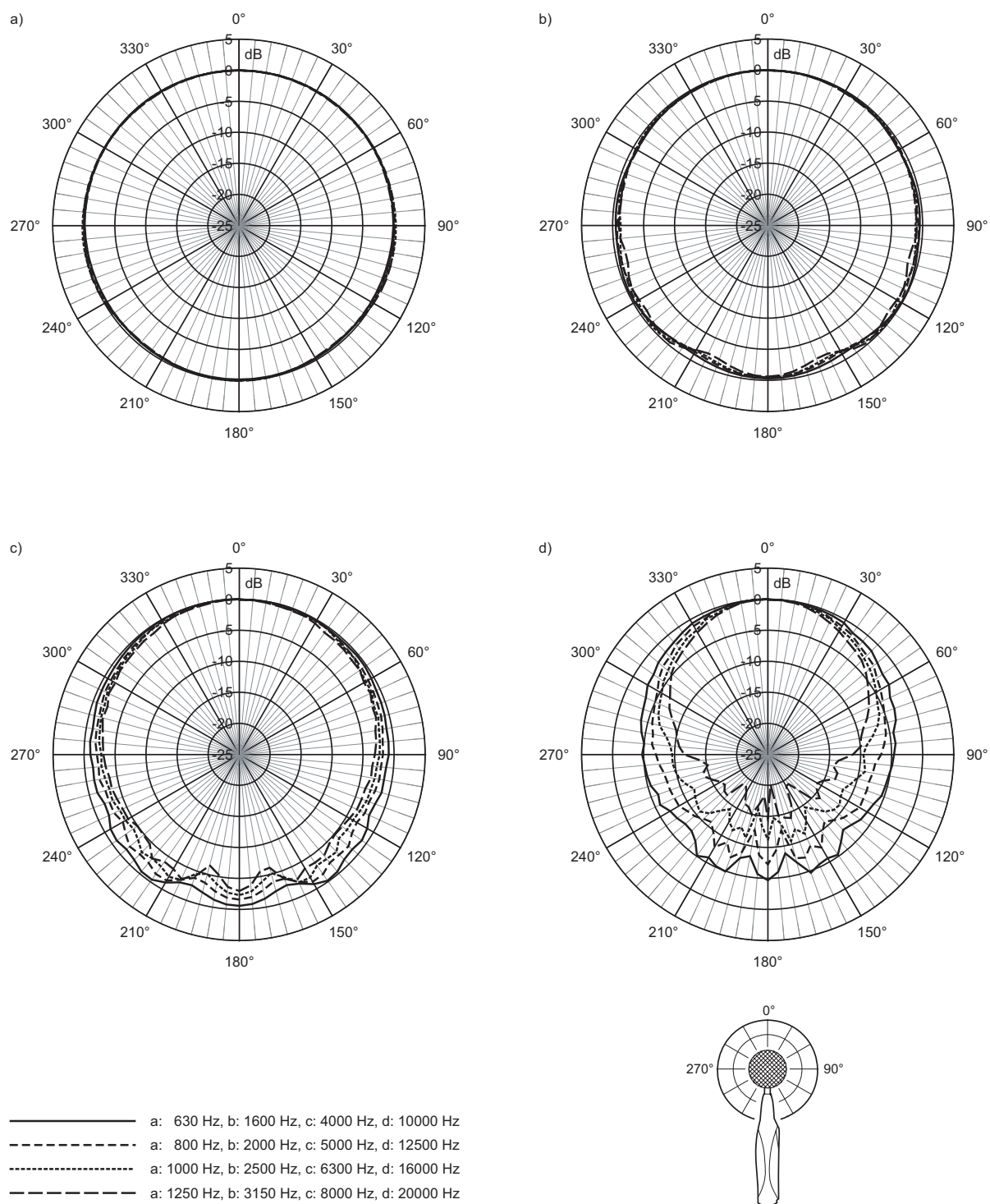


Fig.4.21 Variazioni della sensibilità per schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore collegato direttamente sullo strumento, agli angoli d'incidenza sonora compresi tra $\pm\theta^\circ$ dalla direzione di riferimento. Corrisponde alla tabella A.41

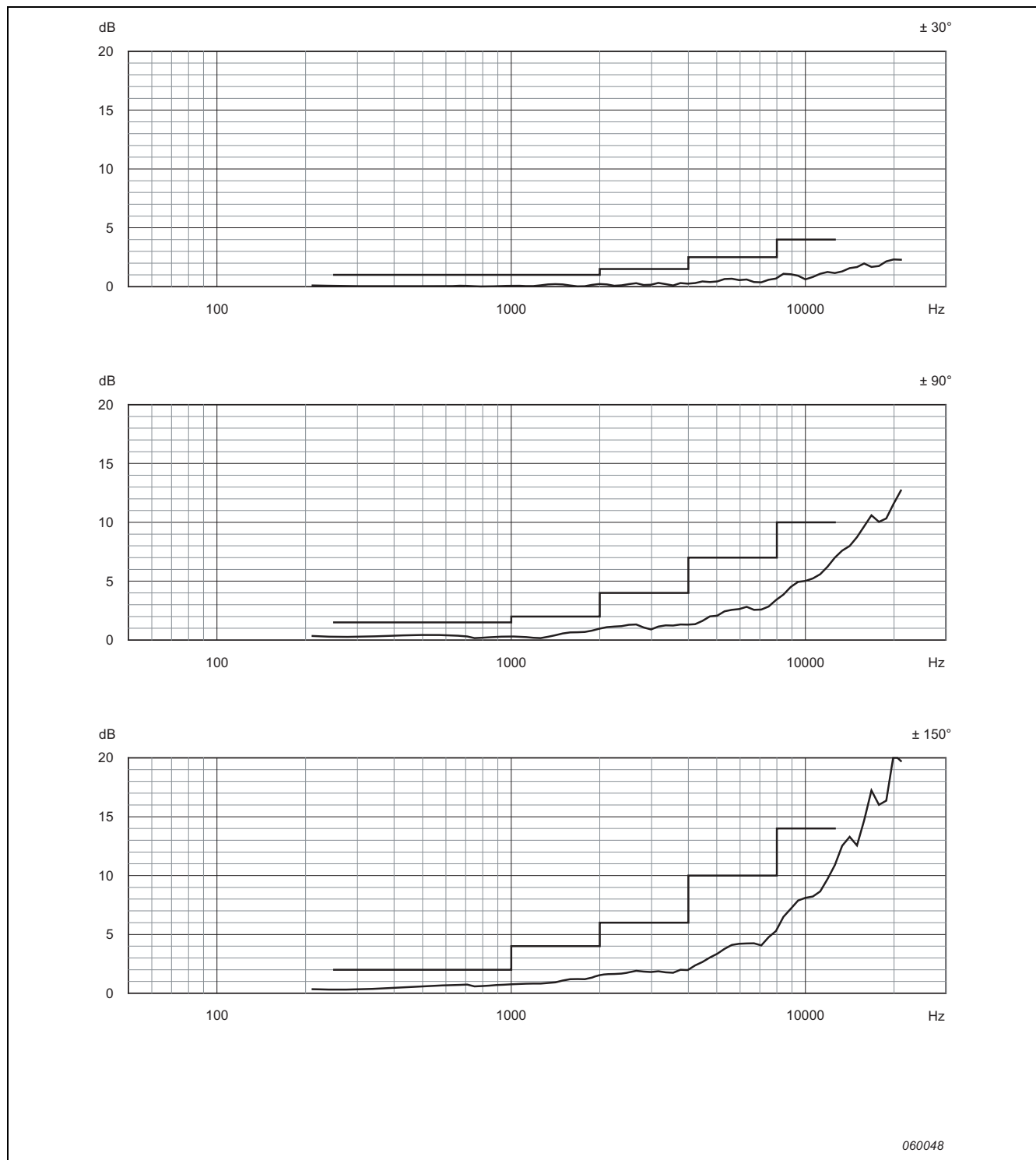


Fig.4.22 Il microfono 4191 non ha specifiche con il kit per microfono da esterni UA-1404

Fig.4.23 Il microfono 4191 non ha specifiche con il kit per microfono da esterni UA-1404

4.8 Rumore generato internamente

Il rumore generato internamente allo strumento, chiamato anche rumore intrinseco, viene indicato per un microfono con sensibilità nominale a circuito aperto, con il parametro *Correzione campo sonoro* impostato su *Campo libero* e nessun accessorio per microfono selezionato.

4.8.1 Rumore intrinseco massimo a banda larga

Tabella 4.1
Rumore
intrinseco
massimo a
banda larga

Rumore massimo	Ponderazione in frequenza				
	Ponderazione A (dB)	Ponderazione B (dB)	Ponderazione C (dB)	Ponderazione Z ^a (dB)	Ponderazione Z ^a Bassa freq. estesa (dB)
Gamma singola					
Microfono	20.9	19.7	19.7	21.8	21.8
Elettrico	25.4	24.4	25.5	30.3	43.0
Totale	26.7	25.7	26.5	30.9	43.0
Alta					
Microfono	20.9	19.7	19.7	21.8	21.8
Elettrico	43.8	42.4	42.4	46.6	48.1
Totale	43.8	42.4	42.4	46.6	48.1
Bassa					
Microfono	20.9	19.7	19.7	21.8	21.8
Elettrico	25.4	24.4	25.5	30.3	43.0
Totale	26.7	25.7	26.5	30.9	43.0

a. minimo 120 secondi L_{Ze}

4.8.2 Rumore intrinseco tipico a banda larga

Tabella 4.2

Rumore intrinseco
tipico a banda
larga

Rumore tipico	Ponderazione in frequenza				
	Ponderazione A (dB)	Ponderazione B (dB)	Ponderazione C (dB)	Ponderazione Z ^a (dB)	Ponderazione Z ^a Bassa freq. estesa (dB)
Gamma singola					
Microfono	19.9	18.7	18.7	20.8	20.8
Elettrico	24.2	23.1	24.1	29.1	37.9
Totale	25.6	24.4	25.2	29.7	38.0
Alta					
Microfono	19.9	18.7	18.7	20.8	20.8
Elettrico	40.2	38.8	38.9	42.9	43.9
Totale	40.2	38.8	38.9	42.9	43.9
Bassa					
Microfono	19.9	18.7	18.7	20.8	20.8
Elettrico	24.2	23.1	24.1	29.1	37.9
Totale	25.6	24.4	25.2	29.7	38.0

a. minimo 120 secondi L_{Ze}q

4.8.3 Spettro tipico di rumore intrinseco

Dalla Fig.4.24 alla Fig.4.27 vengono raffigurati gli spettri tipici del rumore intrinseco.

Fig.4.24 Rumore intrinseco tipico, banda in 1/1 d'ottava, gamma singola

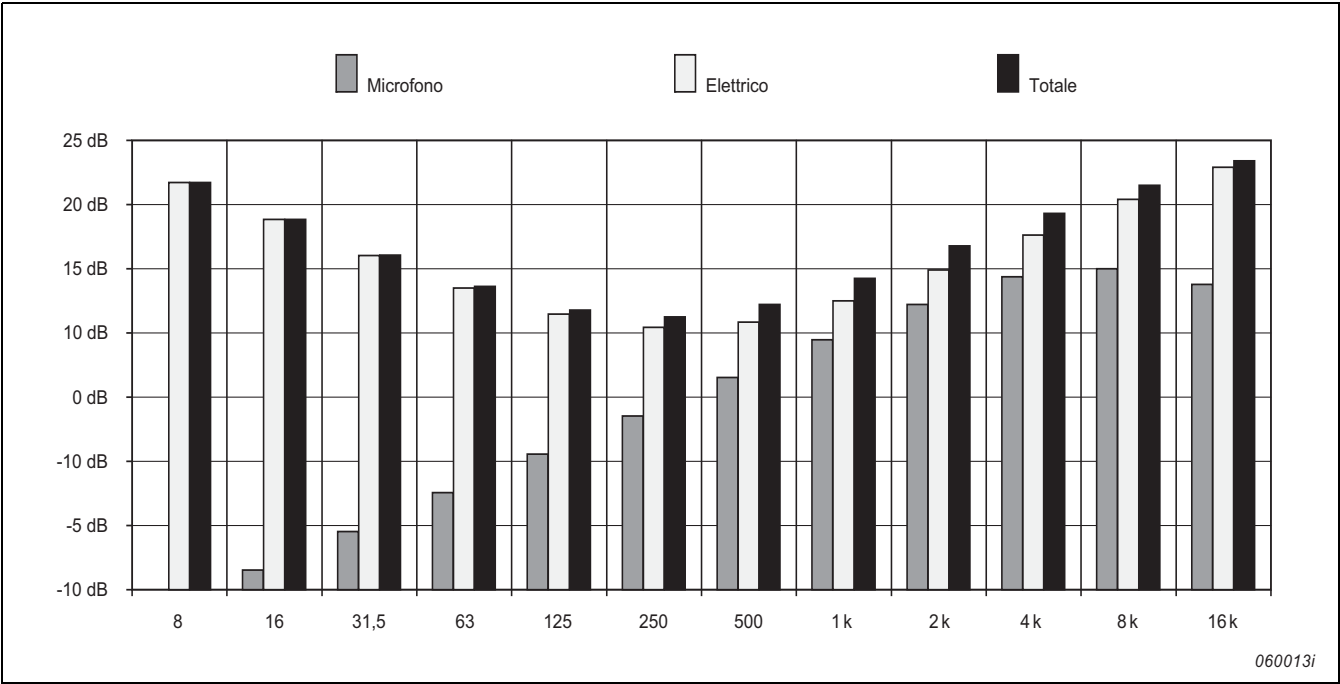


Fig.4.25 Rumore intrinseco tipico, banda in 1/1 d'ottava, gamma Alta

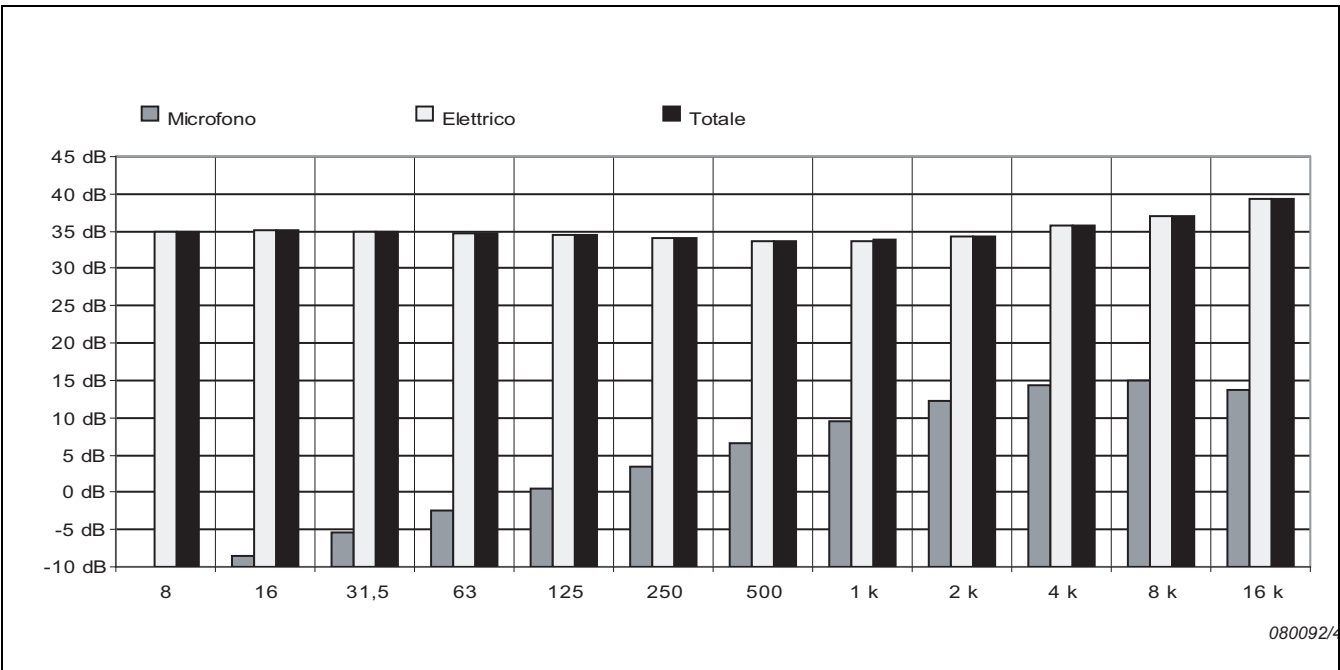


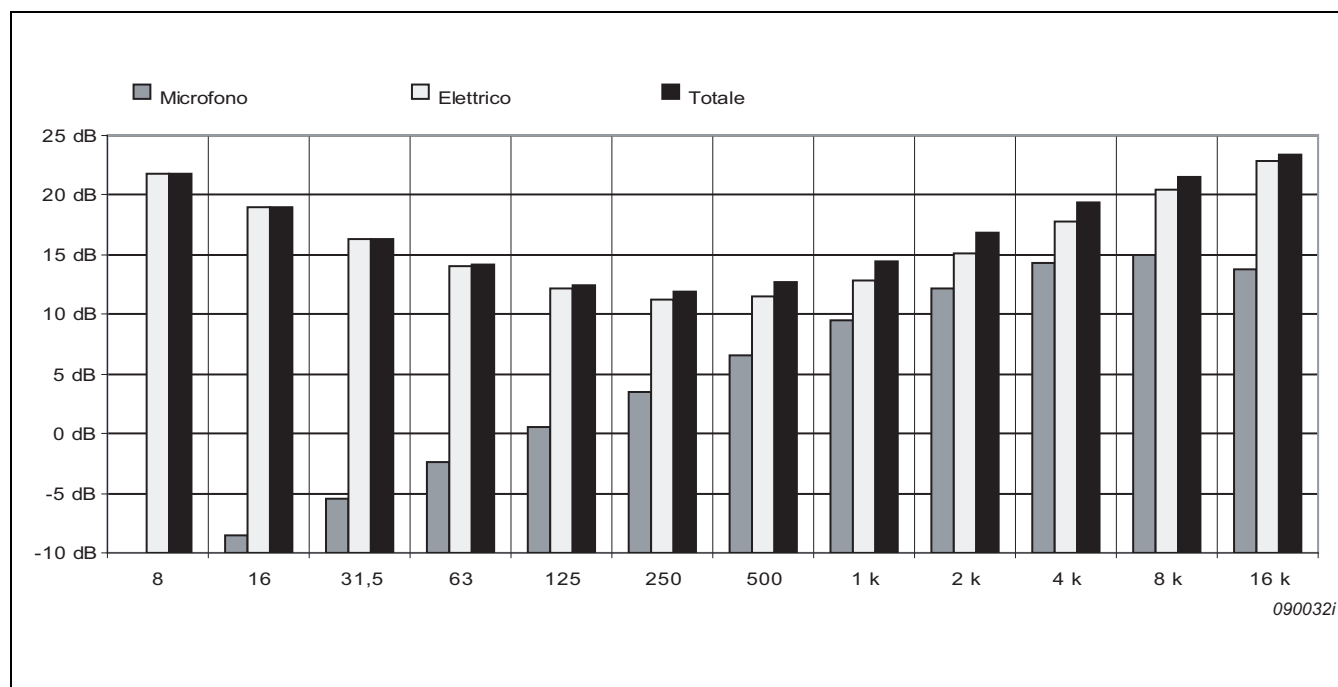
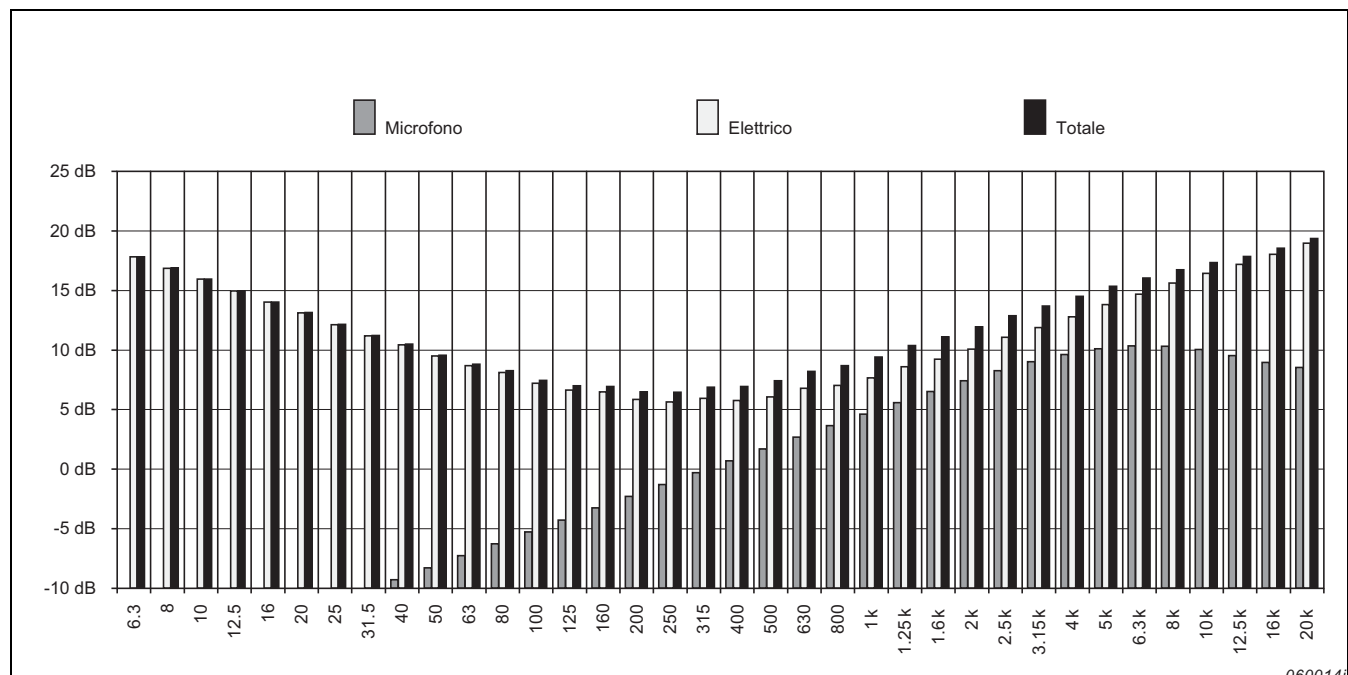
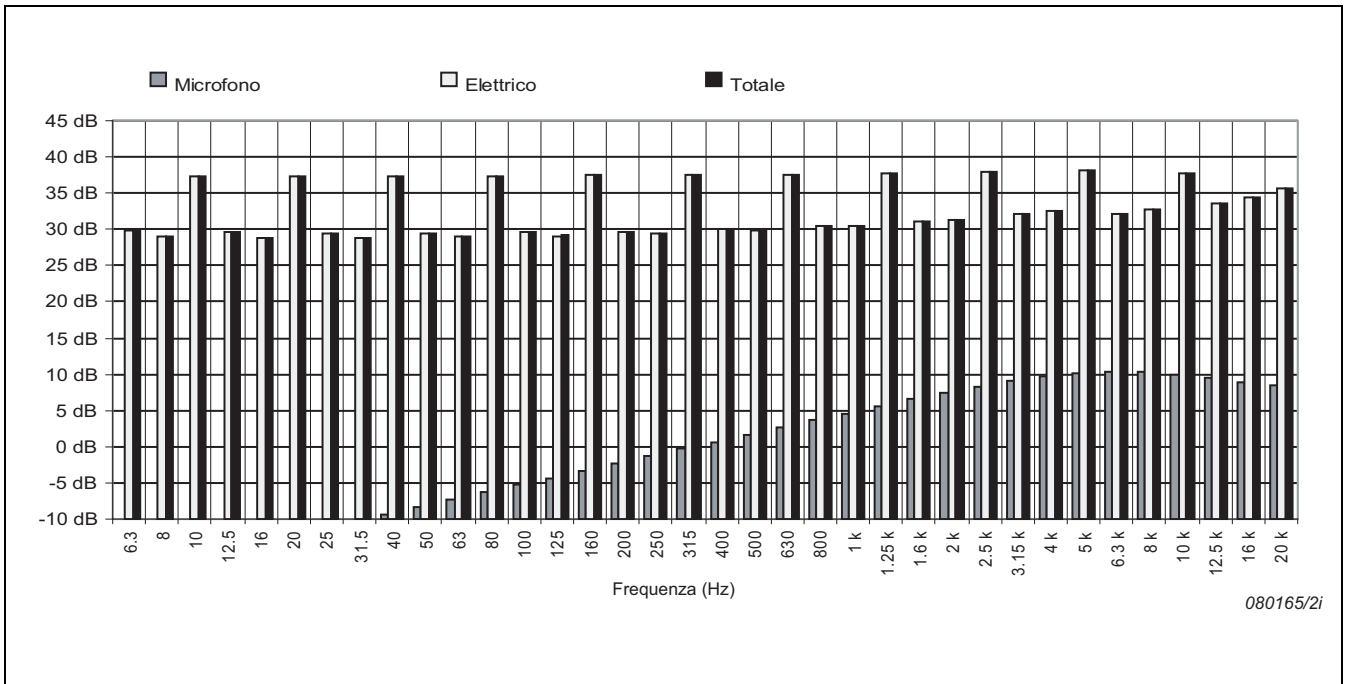
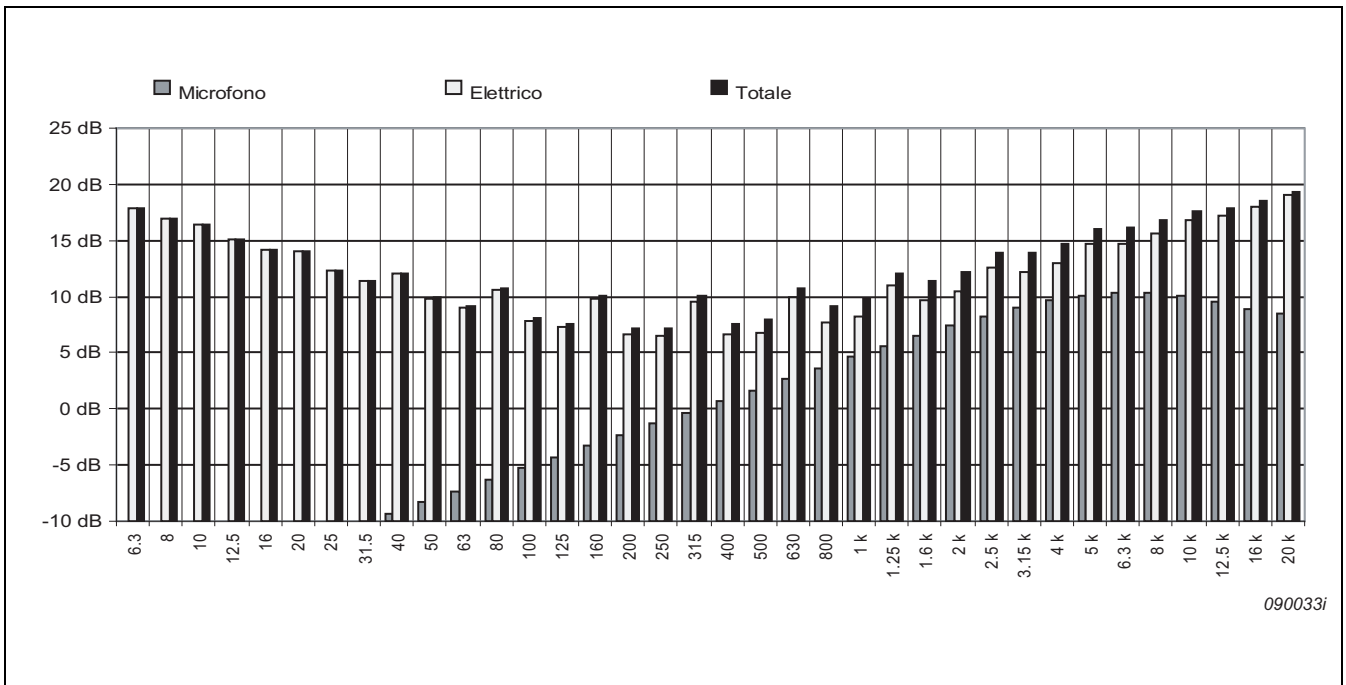
Fig.4.26 Rumore intrinseco tipico, banda in 1/3 d'ottava, a gamma Bassa**Fig.4.27** Rumore intrinseco tipico, banda in 1/3 d'ottava, a gamma singola

Fig.4.28 Rumore intrinseco tipico, banda in 1/3 d'ottava, a gamma Alta**Fig.4.29** Rumore intrinseco tipico, banda in 1/3 d'ottava, a gamma Bassa

4.9 Gamma di misura

Il limite superiore indicato nelle sezioni seguenti si basa sul limite garantito del peggior caso per l'analizzatore e sulla sensibilità nominale a circuito aperto del microfono. Il limite di sovraccarico può essere, dovuto alle tolleranze nel 2250/2270, fino a 1.5 dB sopra il limite del peggior caso e ciò sarà conforme alle tolleranze specificate dalle normative internazionali, purché non venga indicato nessun sovraccarico.

Il limite inferiore indicato nelle seguenti sezioni si basa sul limite garantito del peggior caso per il 2250/2270 e sulla sensibilità nominale a circuito aperto del microfono, in condizioni ambientali di riferimento, con il parametro *Correzione campo sonoro* impostato su *Campo libero* e nessun accessorio per microfono selezionato.

4.9.1 Livello sonoro massimo

Il livello sonoro massimo che il fonometro può recepire senza causare danni allo strumento è il picco di **171 dB**.

4.9.2 Gamma totale

È la differenza tra il limite superiore nella gamma del livello meno sensibile ed il livello di pressione sonora più basso misurabile nella gamma del livello più sensibile, che può essere misurato ad 1 kHz entro i limiti di tolleranza più prudenti, specificati dalle normative internazionali IEC 61672-1, IEC 60651 e IEC 60804:

Tabella 4.3
Gamma totale

Ponderazione in frequenza				
Ponderazione A (dB)	Ponderazione B (dB)	Ponderazione C (dB)	Ponderazione Z (dB)	Ponderazione Z Bassa freq. estesa (dB)
151.8 – 36.6	151.8 – 35.6	151.8 – 36.7	151.8 – 41.5	151.8 – 54.2

Nota: per il livelli di esposizione sonora, le gamme stabilite sono valide se ai limiti si aggiunge $10 \cdot \lg(\Delta t)$. Riferendosi a Δt come intervallo integrato nel tempo, indicato come *Tempo trascorso*, espresso in secondi.

4.9.3 Gamma indicatore primaria

La gamma indicatore primaria in accordo alla normativa internazionale IEC 60651:

Tabella 4.4
Gamma
indicatore primaria

Gamma	Limite sup. (dB)	Limite inferiore				
		Pond. A (dB)	Pond. B (dB)	Pond. C (dB)	Pond. Z (dB)	Ponderazione Z Bassa freq. estesa (dB)
Singola	134.3	35.3	34.3	35.4	40.2	52.9
Alta	134.3	53.7	52.3	52.3	56.5	58.0
Bassa	104.3	35.3	34.3	35.4	40.2	52.9

4.9.4 Gamma indicatore

La gamma indicatore in accordo alla normativa internazionale IEC 60804

Tabella 4.5
Gamma indicatore

Gamma	Limite sup. (dB)	Limite inferiore				
		Pond. A (dB)	Pond. B (dB)	Pond. C (dB)	Pond. Z (dB)	Ponderazione Z Bassa freq. estesa (dB)
Singola	151.3	35.3	34.3	35.4	40.2	52.9
Alta	151.3	53.7	52.3	52.3	56.5	58.0
Bassa	121.3	35.3	34.3	35.4	40.2	52.9

Nota: per il livelli di esposizione sonora, le gamme stabilite sono valide se ai limiti si aggiunge $10 \cdot \lg(\Delta t)$. Riferendosi a Δt come intervallo integrato nel tempo, indicato come *Tempo trascorso*, espresso in secondi.

4.9.5 Gamma di linearità

La gamma di linearità in accordo alla normativa internazionale IEC 60804 è la differenza tra il limite superiore e quello inferiore nella seguente tabella:

Tabella 4.6
Gamma di linearità

Gamma	Limite sup. (dB)	Limite inferiore				
		Pond. A (dB)	Pond. B (dB)	Pond. C (dB)	Pond. Z (dB)	Ponderazione Z Bassa freq. estesa (dB)
Singola	152.8	33.2	32.2	33.3	38.1	50.8
Alta	152.8	51.6	50.2	50.2	54.4	55.9
Bassa	122.8	33.2	32.2	33.3	38.1	50.8

Nota: per il livelli di esposizione sonora, le gamme stabilite sono valide se ai limiti si aggiunge $10 \cdot \lg(\Delta t)$. Riferendosi a Δt come intervallo integrato nel tempo, indicato come *Tempo trascorso*, espresso in secondi.

4.9.6 Gamma dell'impulso

La gamma dell'impulso in accordo alla normativa internazionale IEC 60804 è la differenza tra il limite superiore e quello inferiore nella seguente tabella::

Tabella 4.7
Gamma dell'impulso

Gamma	Limite sup. (dB)	Limite inferiore				
		Pond. A (dB)	Pond. B (dB)	Pond. C (dB)	Pond. Z (dB)	Ponderazione Z Bassa freq. estesa (dB)
Singola	155.8	33.2	32.2	33.3	38.1	50.8
Alta	155.8	51.6	50.2	50.2	54.4	55.9
Bassa	125.8	33.2	32.2	33.3	38.1	50.8

Nota: per il livelli di esposizione sonora, le gamme stabilite sono valide se ai limiti si aggiunge $10 \cdot \lg(\Delta t)$. Riferendosi a Δt come intervallo integrato nel tempo, indicato come *Tempo trascorso*, espresso in secondi.

4.9.7 Gamma di funzionamento lineare

Il punto di partenza per tutte le verifiche della gamma di funzionamento lineare è di 94.0 dB.

Gamma di funzionamento lineare in accordo alla normativa internazionale IEC 61672-1:

Tabella 4.8
Gamma di
funzionamento
lineare

Ponderazione frequenza	Limite superiore					Limite inferiore
	31.5 Hz (dB)	1 kHz (dB)	4 kHz (dB)	8 kHz (dB)	12.5 kHz (dB)	Tutte (dB)
Gamma singola						
Ponderazione A	112.6	151.8	152.8	150.9	147.3	36.6
Ponderazione B	134.9	151.8	151.1	149.1	145.5	35.6
Ponderazione C	149.0	151.8	151.0	149.0	145.3	36.7
Ponderazione Z	152.0	151.8	151.9	152.0	151.6	41.5
Ponderazione Z Bassa frequenza estesa	152.0	151.8	151.9	152.0	151.6	54.2
Alta						
Ponderazione A	112.6	151.8	152.8	150.9	147.3	55.0
Ponderazione B	134.9	151.8	151.1	149.1	145.5	53.6
Ponderazione C	149.0	151.8	151.0	149.0	145.3	53.6
Ponderazione Z	152.0	151.8	151.9	152.0	151.6	57.8
Ponderazione Z Bassa frequenza estesa	152.0	151.8	151.9	152.0	151.6	59.3
Bassa						
Ponderazione A	82.6	121.8	122.8	120.9	117.3	36.6
Ponderazione B	104.9	121.8	121.1	119.1	115.5	35.6
Ponderazione C	119.0	121.8	121.0	119.0	115.3	36.7
Ponderazione Z	122.0	121.8	121.9	122.0	121.6	41.5
Ponderazione Z Bassa frequenza estesa	122.0	121.8	121.9	122.0	121.6	54.2

Nota: per il livelli di esposizione sonora, le gamme stabilite sono valide se ai limiti si aggiunge $10 \cdot \lg(\Delta t)$. Riferendosi a Δt come l'intervallo integrato nel tempo, indicato come *Tempo trascorso*, espresso in secondi.

4.9.8 Gamma del picco C

La gamma del picco C in accordo alla normativa IEC 61672-1 è: 155.0 – 40.7 dB

Tabella 4.9
Gamma picco C

Gamma	Limite superiore (dB)	Limite inferiore (dB)
Singola	155.0	53.5
Alta	155.0	70.4
Bassa	125.0	53.5

4.11.3 Gamma di funzionamento lineare

Gamma di funzionamento lineare in accordo alla normativa internazionale IEC 61260, per l'ingresso elettrico, per tutti i filtri compresi nella serie:

Tabella 4.11
Gamma di funzionamento lineare

Gama	Limite superiore (dB)	Limite inferiore 1/1 ottava (dB)	Limite inferiore 1/3 ottava (dB)
Singola	152.0	36.1	32.2
Alta	152.0	55.0	51.1
Bassa	122.0	36.1	32.2

Al di sotto del limite inferiore, l'errore di linearità del livello è inferiore o uguale all'errore raffigurato nella Fig. 2.1 con il valore L_{inh} impostato sul limite inferiore – 11.5 dB.

4.11.4 Gamma di misura

La gamma di misura in accordo alla normativa internazionale IEC 61260 è la differenza tra il limite superiore della gamma di funzionamento lineare, nella gamma di livello meno sensibile ed il limite inferiore della gamma di funzionamento lineare, nella gamma di livello più sensibile.

Tabella 4.12
Gamma di misura

1/1 ottava (dB)	1/3 ottava (dB)
152.0 – 36.1	152.0 – 32.2

4.12.4 Vibrazione

Sensibilità alle vibrazioni (20 – 1000 Hz) per 1 ms^{-2} : max 76 dB ponderata A, max 86 dB, ponderata Z.

Appendice A

Tabelle

A.2 Risposte in frequenza in campo libero

Risposte in frequenza con ponderazioni in frequenza Z. Misurate con onde sonore sinusoidali progressive piane provenienti da una direzione di riferimento e con il parametro dello strumento *Correz. campo sonoro* impostato su *Campo libero*, si veda la sezione 4.6.5.

Tabella A.2 Risposta in frequenza in campo libero a 0° per microfono 4191, preamplificatore microfono ZC-0032 e risposta elettrica dell'analizzatore 2250/2270, con preamplificatore collegato ad un cavo d'estensione

Frequenza Nominale	Frequenza esatta (6 cifre)	Risposta attuatore microfono dB	Correzione microfono campo libero dB	Risposta microfono campo libero dB	Risposta ai campi elettrici dB	Risposta acustica dB	Incertezza estesa dB
63	63.0957	0.00	0.00	0.00	0.00	0.00	0.05
80	79.4328	0.00	0.00	0.00	0.00	0.00	0.05
100	100	0.00	0.00	0.00	0.00	0.00	0.05
125	125.893	0.00	0.00	0.00	0.00	0.00	0.05
160	158.489	0.00	0.00	0.00	0.00	0.00	0.05
200	199.526	0.00	0.00	0.00	0.00	0.00	0.05
250	251.189	0.00	0.00	0.00	0.00	0.00	0.05
315	316.228	0.00	0.01	0.01	0.00	0.01	0.06
400	398.107	0.00	0.01	0.01	0.00	0.01	0.06
500	501.187	-0.01	0.02	0.02	0.00	0.02	0.07
630	630.957	-0.03	0.04	0.01	0.00	0.01	0.07
800	794.328	-0.04	0.06	0.02	0.00	0.02	0.07
1000	1000	-0.08	0.10	0.02	0.00	0.02	0.07
1060	1059.25	-0.09	0.11	0.02	0.00	0.02	0.07
1120	1122.02	-0.10	0.12	0.02	0.00	0.02	0.07
1180	1188.5	-0.11	0.13	0.02	0.00	0.02	0.08
1250	1258.93	-0.12	0.15	0.02	0.00	0.02	0.08
1320	1333.52	-0.14	0.16	0.02	0.00	0.02	0.08
1400	1412.54	-0.15	0.18	0.03	0.00	0.03	0.08
1500	1496.24	-0.17	0.19	0.03	0.00	0.03	0.08
1600	1584.89	-0.19	0.21	0.03	0.00	0.03	0.08
1700	1678.8	-0.21	0.23	0.02	0.00	0.02	0.08
1800	1778.28	-0.23	0.26	0.02	0.00	0.02	0.09
1900	1883.65	-0.26	0.28	0.02	0.00	0.02	0.09
2000	1995.26	-0.28	0.31	0.02	0.00	0.02	0.09
2120	2113.49	-0.32	0.34	0.02	0.00	0.02	0.09
2240	2238.72	-0.36	0.37	0.01	0.00	0.01	0.09
2360	2371.37	-0.39	0.41	0.01	0.00	0.01	0.10
2500	2511.89	-0.44	0.45	0.01	0.01	0.02	0.10
2650	2660.73	-0.49	0.50	0.01	0.01	0.02	0.10
2800	2818.38	-0.55	0.55	0.00	0.01	0.01	0.11
3000	2985.38	-0.61	0.61	0.00	0.01	0.01	0.11
3150	3162.28	-0.68	0.67	-0.01	0.01	0.00	0.12
3350	3349.65	-0.76	0.75	-0.01	0.01	0.00	0.12
3550	3548.13	-0.84	0.83	-0.01	0.01	0.00	0.13

Frequenza Nominale	Frequenza esatta (6 cifre)	Risposta attuatore microfono dB	Correzione microfono campo libero dB	Risposta microfono campo libero dB	Risposta ai campi elettrici dB	Risposta acustica dB	Incertezza estesa dB
3750	3758.37	-0.93	0.92	-0.01	0.01	0.00	0.13
4000	3981.07	-1.03	1.03	-0.01	0.01	0.00	0.14
4250	4216.97	-1.15	1.14	-0.01	0.01	0.00	0.14
4500	4466.84	-1.27	1.26	-0.01	0.01	0.00	0.14
4750	4731.51	-1.41	1.40	-0.01	0.01	0.00	0.14
5000	5011.87	-1.55	1.55	-0.01	0.01	0.00	0.15
5300	5308.84	-1.71	1.69	-0.02	0.01	-0.01	0.15
5600	5623.41	-1.88	1.86	-0.02	0.01	-0.01	0.15
6000	5956.62	-2.07	2.07	0.00	0.00	0.00	0.16
6300	6309.57	-2.26	2.26	0.00	0.00	0.00	0.16
6700	6683.44	-2.50	2.50	0.00	-0.01	-0.01	0.17
7100	7079.46	-2.76	2.74	-0.01	-0.02	-0.03	0.17
7500	7498.94	-3.03	3.01	-0.01	-0.03	-0.04	0.17
8000	7943.28	-3.28	3.33	0.05	-0.04	0.01	0.18
8500	8413.95	-3.58	3.64	0.06	-0.07	-0.01	0.19
9000	8912.51	-3.89	4.01	0.12	-0.10	0.02	0.20
9500	9440.61	-4.23	4.37	0.14	-0.14	0.00	0.22
10000	10000	-4.60	4.80	0.20	-0.19	0.01	0.23
10600	10592.5	-4.99	5.23	0.24	-0.25	-0.01	0.24
11200	11220.2	-5.39	5.68	0.29	-0.31	-0.02	0.26
11800	11885	-5.79	6.16	0.37	-0.38	-0.01	0.28
12500	12589.3	-6.19	6.67	0.49	-0.44	0.05	0.29
13200	13335.2	-6.58	7.10	0.53	-0.50	0.03	0.31
14000	14125.4	-6.95	7.49	0.54	-0.54	0.00	0.33
15000	14962.4	-7.33	7.89	0.56	-0.57	-0.01	0.35
16000	15848.9	-7.69	8.21	0.52	-0.58	-0.06	0.38
17000	16788	-8.05	8.67	0.62	-0.59	0.03	0.40
18000	17782.8	-8.38	9.02	0.63	-0.60	0.03	0.43
19000	18836.5	-8.71	9.32	0.61	-0.60	0.01	0.45
20000	19952.6	-9.07	9.62	0.55	-0.61	-0.06	0.48
21200	21134.9	-9.42	9.90	0.48	-0.62	-0.14	0.49
22400	22387.2	-9.77	10.12	0.35	-0.66	-0.31	0.49

Tabella A.3 Risposta in frequenza in campo libero a 0° per microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con il preamplificatore montato direttamente sul 2250/2270

Frequenza nominale	Frequenza esatta (6 cifre)	Risposta acustica (dalla tabella A.2) dB	Incertezza estesa dB	Influenza strumento dB	Incertezza estesa dB	Risposta acustica dB	Incertezza estesa dB
63	63.0957	0.00	0.05	0.00	0.10	0.00	0.11
80	79.4328	0.00	0.05	0.00	0.10	0.00	0.11
100	100	0.00	0.05	0.00	0.10	0.00	0.11
125	125.893	0.00	0.05	0.00	0.10	0.00	0.11
160	158.489	0.00	0.05	0.01	0.10	0.01	0.11
200	199.526	0.00	0.05	0.03	0.10	0.03	0.11
250	251.189	0.00	0.05	0.06	0.10	0.07	0.11
315	316.228	0.01	0.06	0.13	0.10	0.14	0.12
400	398.107	0.01	0.06	0.21	0.10	0.22	0.12
500	501.187	0.02	0.07	0.22	0.10	0.24	0.12
630	630.957	0.01	0.07	0.07	0.10	0.08	0.12
800	794.328	0.02	0.07	-0.11	0.10	-0.09	0.12
1000	1000	0.02	0.07	-0.09	0.10	-0.08	0.12
1060	1059.25	0.02	0.07	-0.14	0.10	-0.12	0.12
1120	1122.02	0.02	0.07	-0.21	0.10	-0.19	0.12
1180	1188.5	0.02	0.08	-0.29	0.10	-0.27	0.13
1250	1258.93	0.02	0.08	-0.31	0.10	-0.29	0.13
1320	1333.52	0.02	0.08	-0.24	0.10	-0.21	0.13
1400	1412.54	0.03	0.08	-0.11	0.10	-0.08	0.13
1500	1496.24	0.03	0.08	0.00	0.10	0.03	0.13
1600	1584.89	0.03	0.08	0.04	0.10	0.06	0.13
1700	1678.8	0.02	0.08	-0.02	0.10	0.00	0.13
1800	1778.28	0.02	0.09	-0.13	0.10	-0.11	0.13
1900	1883.65	0.02	0.09	-0.18	0.10	-0.15	0.13
2000	1995.26	0.02	0.09	-0.10	0.10	-0.08	0.13
2120	2113.49	0.02	0.09	0.05	0.10	0.07	0.13
2240	2238.72	0.01	0.09	0.04	0.15	0.05	0.13
2360	2371.37	0.01	0.10	-0.33	0.15	-0.32	0.18
2500	2511.89	0.02	0.10	-0.18	0.15	-0.16	0.18
2650	2660.73	0.02	0.10	0.09	0.15	0.11	0.18
2800	2818.38	0.01	0.11	-0.02	0.15	-0.01	0.19
3000	2985.38	0.01	0.11	-0.19	0.15	-0.18	0.19
3150	3162.28	0.00	0.12	0.10	0.15	0.11	0.19
3350	3349.65	0.00	0.12	0.13	0.15	0.14	0.19
3550	3548.13	0.00	0.13	-0.10	0.15	-0.10	0.19
3750	3758.37	0.00	0.13	0.07	0.15	0.07	0.20
4000	3981.07	0.00	0.14	0.04	0.15	0.04	0.20
4250	4216.97	0.00	0.14	-0.10	0.15	-0.10	0.21
4500	4466.84	0.00	0.14	0.13	0.15	0.13	0.21
4750	4731.51	0.00	0.14	-0.17	0.15	-0.17	0.21
5000	5011.87	0.00	0.15	-0.12	0.15	-0.12	0.21
5300	5308.84	-0.01	0.15	-0.24	0.15	-0.25	0.21
5600	5623.41	-0.01	0.15	-0.06	0.15	-0.07	0.21
6000	5956.62	0.00	0.16	-0.13	0.15	-0.13	0.21
6300	6309.57	0.00	0.16	0.01	0.15	0.01	0.22
6700	6683.44	-0.01	0.17	0.00	0.15	-0.01	0.22
7100	7079.46	-0.03	0.17	0.01	0.15	-0.02	0.23
7500	7498.94	-0.04	0.17	0.10	0.20	0.05	0.23
8000	7943.28	0.01	0.18	-0.19	0.20	-0.18	0.26
8500	8413.95	-0.01	0.19	-0.29	0.20	-0.30	0.27
9000	8912.51	0.02	0.20	-0.14	0.20	-0.12	0.28
9500	9440.61	0.00	0.22	0.01	0.20	0.01	0.28
10000	10000	0.01	0.23	-0.04	0.20	-0.03	0.30
10600	10592.5	-0.01	0.24	-0.02	0.20	-0.04	0.30
11200	11220.2	-0.02	0.26	-0.22	0.20	-0.24	0.33
11800	11885	-0.01	0.28	-0.23	0.20	-0.24	0.34
12500	12589.3	0.05	0.29	-0.03	0.20	0.02	0.35
13200	13335.2	0.03	0.31	0.01	0.20	0.04	0.37

Frequenza nominale	Frequenza esatta (6 cifre)	Risposta acustica (dalla tabella A.2) dB	Incertezza estesa dB	Influenza strumento dB	Incertezza estesa dB	Risposta acustica dB	Incertezza estesa dB
14000	14125.4	0.00	0.33	-0.04	0.20	-0.05	0.39
15000	14962.4	-0.01	0.35	-0.13	0.20	-0.14	0.39
16000	15848.9	-0.06	0.38	-0.04	0.20	-0.10	0.40
17000	16788	0.03	0.40	0.11	0.20	0.14	0.43
18000	17782.8	0.03	0.43	-0.12	0.20	-0.08	0.45
19000	18836.5	0.01	0.45	-0.10	0.20	-0.09	0.47
20000	19952.6	-0.06	0.48	0.06	0.20	0.00	0.49
21200	21134.9	-0.14	0.49	-0.19	0.20	-0.33	0.52
22400	22387.2	-0.31	0.49	-0.43	0.20	-0.75	0.53

Tabella A.4 Risposta in frequenza in campo libero a 0° per schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 e risposta elettrica dell'analizzatore 2250/2270, con preamplificatore collegato ad un cavo d'estensione

Frequenza nominale	Frequenza esatta (6 cifre)	Risposta microfono campo libero (dalla tabella A.2) dB	Incertezza estesa dB	Influenza schermo antivento dB	Incertezza estesa dB	Risposta ai campi elettrici dB	Risposta acustica dB	Incertezza estesa dB
63	63.0957	0.00	0.05	0.00	0.10	0.00	0.00	0.16
80	79.4328	0.00	0.05	0.00	0.10	0.00	0.00	0.16
100	100	0.00	0.05	0.00	0.10	0.00	0.00	0.16
125	125.893	0.00	0.05	0.00	0.10	0.00	0.00	0.16
160	158.489	0.00	0.05	0.00	0.10	0.00	0.00	0.16
200	199.526	0.00	0.05	0.00	0.10	-0.01	-0.01	0.16
250	251.189	0.00	0.05	0.02	0.10	-0.01	0.01	0.16
315	316.228	0.01	0.06	0.03	0.10	-0.02	0.02	0.16
400	398.107	0.01	0.06	0.05	0.10	-0.03	0.03	0.16
500	501.187	0.02	0.07	0.08	0.10	-0.05	0.05	0.17
630	630.957	0.01	0.07	0.11	0.10	-0.08	0.04	0.17
800	794.328	0.02	0.07	0.14	0.10	-0.13	0.03	0.17
1000	1000	0.02	0.07	0.19	0.10	-0.21	0.00	0.17
1060	1059.25	0.02	0.07	0.22	0.10	-0.24	0.00	0.17
1120	1122.02	0.02	0.07	0.25	0.10	-0.27	0.00	0.17
1180	1188.5	0.02	0.08	0.29	0.10	-0.30	0.01	0.17
1250	1258.93	0.02	0.08	0.32	0.10	-0.34	0.00	0.17
1320	1333.52	0.02	0.08	0.37	0.10	-0.38	0.01	0.17
1400	1412.54	0.03	0.08	0.41	0.10	-0.42	0.02	0.17
1500	1496.24	0.03	0.08	0.46	0.10	-0.47	0.02	0.17
1600	1584.89	0.03	0.08	0.51	0.10	-0.52	0.02	0.17
1700	1678.8	0.02	0.08	0.55	0.10	-0.57	0.00	0.17
1800	1778.28	0.02	0.09	0.59	0.10	-0.62	-0.01	0.17
1900	1883.65	0.02	0.09	0.64	0.10	-0.66	0.00	0.17
2000	1995.26	0.02	0.09	0.67	0.10	-0.70	-0.01	0.22
2120	2113.49	0.02	0.09	0.70	0.10	-0.73	-0.01	0.22
2240	2238.72	0.01	0.09	0.71	0.15	-0.74	-0.02	0.22
2360	2371.37	0.01	0.10	0.72	0.15	-0.74	-0.01	0.22
2500	2511.89	0.01	0.10	0.72	0.15	-0.71	0.02	0.22
2650	2660.73	0.01	0.10	0.70	0.15	-0.67	0.04	0.22
2800	2818.38	0.00	0.11	0.68	0.15	-0.61	0.07	0.11
3000	2985.38	0.00	0.11	0.63	0.15	-0.53	0.10	0.23
3150	3162.28	-0.01	0.12	0.55	0.15	-0.46	0.08	0.23
3350	3349.65	-0.01	0.12	0.44	0.15	-0.37	0.06	0.23
3550	3548.13	-0.01	0.13	0.30	0.15	-0.29	0.00	0.24
3750	3758.37	-0.01	0.13	0.16	0.15	-0.22	-0.07	0.24
4000	3981.07	-0.01	0.14	0.04	0.15	-0.15	-0.12	0.24
4250	4216.97	-0.01	0.14	-0.05	0.15	-0.08	-0.14	0.24
4500	4466.84	-0.01	0.14	-0.13	0.15	-0.02	-0.16	0.24
4750	4731.51	-0.01	0.14	-0.18	0.15	0.03	-0.16	0.24
5000	5011.87	-0.01	0.15	-0.19	0.15	0.08	-0.12	0.25
5300	5308.84	-0.02	0.15	-0.17	0.15	0.12	-0.07	0.29
5600	5623.41	-0.02	0.15	-0.16	0.15	0.16	-0.02	0.29

Frequenza nominale	Frequenza esatta (6 cifre)	Risposta microfono campo libero (dalla tabella A.2) dB	Incertezza estesa dB	Influenza schermo antivento dB	Incertezza estesa dB	Risposta ai campi elettrici dB	Risposta acustica dB	Incertezza estesa dB
6000	5956.62	0.00	0.16	-0.13	0.15	0.20	0.07	0.30
6300	6309.57	0.00	0.16	-0.11	0.15	0.23	0.12	0.30
6700	6683.44	0.00	0.17	-0.16	0.15	0.26	0.10	0.30
7100	7079.46	-0.01	0.17	-0.28	0.15	0.29	0.00	0.30
7500	7498.94	-0.01	0.17	-0.36	0.20	0.32	-0.05	0.30
8000	7943.28	0.05	0.18	-0.41	0.20	0.34	-0.02	0.31
8500	8413.95	0.06	0.19	-0.47	0.20	0.37	-0.04	0.31
9000	8912.51	0.12	0.20	-0.45	0.20	0.40	0.07	0.32
9500	9440.61	0.14	0.22	-0.47	0.20	0.42	0.09	0.33
10000	10000	0.20	0.23	-0.52	0.20	0.45	0.13	0.34
10600	10592.5	0.24	0.24	-0.63	0.20	0.48	0.09	0.35
11200	11220.2	0.29	0.26	-0.74	0.20	0.51	0.06	0.36
11800	11885	0.37	0.28	-0.86	0.20	0.54	0.05	0.38
12500	12589.3	0.49	0.29	-0.88	0.20	0.57	0.18	0.38
13200	13 335.2	0.53	0.31	-1.00	0.20	0.60	0.13	0.40
14000	14125.4	0.54	0.33	-1.13	0.20	0.64	0.05	0.41
15000	14962.4	0.56	0.35	-1.21	0.20	0.67	0.02	0.46
16000	15848.9	0.52	0.38	-1.33	0.20	0.71	-0.10	0.48
17000	16788	0.62	0.40	-1.50	0.20	0.74	-0.14	0.50
18000	17782.8	0.63	0.43	-1.61	0.20	0.77	-0.21	0.52
19000	18836.5	0.61	0.45	-1.64	0.20	0.80	-0.23	0.54
20000	19952.6	0.55	0.48	-1.73	0.20	0.82	-0.36	0.57
21200	21134.9	0.48	0.49	-1.81	0.20	0.82	-0.51	0.57
22400	22387.2	0.35	0.49	-1.79	0.20	0.80	-0.64	0.57

Tabella A.5 Risposta in frequenza in campo libero a 0° per schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sul 2250/2270

Frequenza nominale	Frequenza esatta (6 cifre)	Risposta acustica (dalla tabella A.4) dB	Incertezza estesa dB	Influenza strumento dB	Incertezza estesa dB	Risposta acustica dB	Incertezza estesa dB
63	63.0957	0.00	0.16	0.00	0.10	0.00	0.19
80	79.4328	0.00	0.16	0.00	0.10	0.00	0.19
100	100	0.00	0.16	0.00	0.10	0.00	0.19
125	125.893	0.00	0.16	0.00	0.10	0.00	0.19
160	158.489	0.00	0.16	0.01	0.10	0.01	0.19
200	199.526	-0.01	0.16	0.03	0.10	0.02	0.19
250	251.189	0.01	0.16	0.06	0.10	0.08	0.19
315	316.228	0.02	0.16	0.13	0.10	0.15	0.19
400	398.107	0.03	0.16	0.21	0.10	0.24	0.19
500	501.187	0.05	0.17	0.22	0.10	0.27	0.19
630	630.957	0.04	0.17	0.07	0.10	0.11	0.19
800	794.328	0.03	0.17	-0.11	0.10	-0.08	0.19
1000	1000	0.00	0.17	-0.09	0.10	-0.10	0.19
1060	1059.25	0.00	0.17	-0.14	0.10	-0.14	0.19
1120	1122.02	0.00	0.17	-0.21	0.10	-0.21	0.19
1180	1188.5	0.01	0.17	-0.29	0.10	-0.28	0.20
1250	1258.93	0.00	0.17	-0.31	0.10	-0.31	0.20
1320	1333.52	0.01	0.17	-0.24	0.10	-0.22	0.20
1400	1412.54	0.02	0.17	-0.11	0.10	-0.09	0.20
1500	1496.24	0.02	0.17	0.00	0.10	0.02	0.20
1600	1584.89	0.02	0.17	0.04	0.10	0.05	0.20
1700	1678.8	0.00	0.17	-0.02	0.10	-0.02	0.20
1800	1778.28	-0.01	0.17	-0.13	0.10	-0.14	0.20
1900	1883.65	0.00	0.17	-0.18	0.10	-0.17	0.20
2000	1995.26	-0.01	0.22	-0.10	0.10	-0.11	0.24
2120	2113.49	-0.01	0.22	0.05	0.10	0.04	0.24
2240	2238.72	-0.02	0.22	0.04	0.15	0.02	0.27
2360	2371.37	-0.01	0.22	-0.33	0.15	-0.34	0.27
2500	2511.89	0.02	0.22	-0.18	0.15	-0.16	0.27

Frequenza nominale	Frequenza esatta (6 cifre)	Risposta acustica (dalla tabella A.4) dB	Incertezza estesa dB	Influenza strumento dB	Incertezza estesa dB	Risposta acustica dB	Incertezza estesa dB
2650	2660.73	0.04	0.22	0.09	0.15	0.13	0.27
2800	2818.38	0.07	0.11	-0.02	0.15	0.05	0.19
3000	2985.38	0.10	0.23	-0.19	0.15	-0.09	0.27
3150	3162.28	0.08	0.23	0.10	0.15	0.19	0.28
3350	3349.65	0.06	0.23	0.13	0.15	0.20	0.28
3550	3548.13	0.00	0.24	-0.10	0.15	-0.10	0.28
3750	3758.37	-0.07	0.24	0.07	0.15	0.00	0.28
4000	3981.07	-0.12	0.24	0.04	0.15	-0.08	0.29
4250	4216.97	-0.14	0.24	-0.10	0.15	-0.24	0.29
4500	4466.84	-0.16	0.24	0.13	0.15	-0.03	0.29
4750	4731.51	-0.16	0.24	-0.17	0.15	-0.33	0.29
5000	5011.87	-0.12	0.25	-0.12	0.15	-0.24	0.29
5300	5308.84	-0.07	0.29	-0.24	0.15	-0.31	0.33
5600	5623.41	-0.02	0.29	-0.06	0.15	-0.08	0.33
6000	5956.62	0.07	0.30	-0.13	0.15	-0.06	0.33
6300	6309.57	0.12	0.30	0.01	0.15	0.13	0.33
6700	6683.44	0.10	0.30	0.00	0.15	0.10	0.34
7100	7079.46	0.00	0.30	0.01	0.15	0.01	0.34
7500	7498.94	-0.05	0.30	0.10	0.20	0.04	0.36
8000	7943.28	-0.02	0.31	-0.19	0.20	-0.21	0.37
8500	8413.95	-0.04	0.31	-0.29	0.20	-0.33	0.37
9000	8912.51	0.07	0.32	-0.14	0.20	-0.07	0.38
9500	9440.61	0.09	0.33	0.01	0.20	0.10	0.39
10000	10000	0.13	0.34	-0.04	0.20	0.09	0.39
10600	10592.5	0.09	0.35	-0.02	0.20	0.06	0.40
11200	11220.2	0.06	0.36	-0.22	0.20	-0.16	0.41
11800	11885	0.05	0.38	-0.23	0.20	-0.18	0.43
12500	12589.3	0.18	0.38	-0.03	0.20	0.15	0.43
13200	13335.2	0.13	0.40	0.01	0.20	0.14	0.45
14000	14125.4	0.05	0.41	-0.04	0.20	0.00	0.46
15000	14962.4	0.02	0.46	-0.13	0.20	-0.11	0.50
16000	15848.9	-0.10	0.48	-0.04	0.20	-0.14	0.52
17000	16788	-0.14	0.50	0.11	0.20	-0.03	0.54
18000	17782.8	-0.21	0.52	-0.12	0.20	-0.32	0.56
19000	18836.5	-0.23	0.54	-0.10	0.20	-0.33	0.58
20000	19952.6	-0.36	0.57	0.06	0.20	-0.30	0.60
21200	21134.9	-0.51	0.57	-0.19	0.20	-0.70	0.61
22400	22387.2	-0.64	0.57	-0.43	0.20	-1.08	0.61

Tabella A.6 Il microfono 4191 non ha specifiche con il kit per microfono da esterni UA-1404

A.3 Risposte in frequenza in campo diffuso

Risposte in frequenza in campo diffuso con ponderazione in frequenza Z. Misurate con onde sonore ad incidenza random ed il parametro dello strumento *Correz. campo sonoro* impostato su *Campo diffuso*, si veda la sezione 4.6.6.

Tabella A.7 Risposta in frequenza in campo diffuso per microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con o senza preamplificatore collegato ad un cavo d'estensione

Frequenza Nominale	Frequenza esatta (6 cifre)	Risposta attuatore microfono dB	Correzione microfono campo libero dB	Risposta microfono campo libero dB	Risposta ai campi elettrici dB	Risposta acustica dB	Incertezza estesa dB
63	63.0957	0.00	0.00	0.00	0.00	0.00	0.05
80	79.4328	0.00	0.00	0.00	0.00	0.00	0.05
100	100	0.00	0.00	0.00	0.00	0.00	0.05
125	125.893	0.00	0.00	0.00	0.00	0.00	0.05
160	158.489	0.00	0.00	0.00	0.00	0.00	0.05
200	199.526	0.00	0.00	0.00	0.00	0.00	0.05
250	251.189	0.00	0.00	0.00	0.01	0.01	0.05
315	316.228	0.00	-0.01	-0.01	0.01	0.00	0.06
400	398.107	0.00	-0.01	-0.01	0.01	0.00	0.06
500	501.187	-0.01	-0.01	-0.02	0.02	0.00	0.10
630	630.957	-0.03	-0.01	-0.04	0.03	-0.01	0.10
800	794.328	-0.04	-0.02	-0.06	0.05	-0.01	0.10
1000	1000	-0.08	-0.03	-0.11	0.07	-0.04	0.10
1060	1059.25	-0.09	-0.03	-0.12	0.08	-0.04	0.10
1120	1122.02	-0.10	-0.03	-0.13	0.09	-0.04	0.10
1180	1188.5	-0.11	-0.03	-0.14	0.10	-0.04	0.10
1250	1258.93	-0.12	-0.04	-0.16	0.11	-0.05	0.10
1320	1333.52	-0.14	-0.04	-0.18	0.13	-0.05	0.10
1400	1412.54	-0.15	-0.05	-0.20	0.14	-0.06	0.10
1500	1496.24	-0.17	-0.06	-0.22	0.16	-0.06	0.10
1600	1584.89	-0.19	-0.06	-0.25	0.18	-0.07	0.10
1700	1678.8	-0.21	-0.06	-0.27	0.20	-0.07	0.10
1800	1778.28	-0.23	-0.06	-0.29	0.22	-0.07	0.10
1900	1883.65	-0.26	-0.05	-0.30	0.25	-0.05	0.10
2000	1995.26	-0.28	-0.03	-0.31	0.28	-0.03	0.10
2120	2113.49	-0.32	0.00	-0.32	0.31	-0.01	0.10
2240	2238.72	-0.36	0.01	-0.34	0.34	0.00	0.11
2360	2371.37	-0.39	0.03	-0.37	0.38	0.01	0.11
2500	2511.89	-0.44	0.03	-0.41	0.42	0.01	0.12
2650	2660.73	-0.49	0.02	-0.47	0.47	0.00	0.12
2800	2818.38	-0.55	0.01	-0.54	0.52	-0.02	0.13
3000	2985.38	-0.61	0.01	-0.61	0.58	-0.03	0.13
3150	3162.28	-0.68	0.01	-0.67	0.64	-0.03	0.13
3350	3349.65	-0.76	0.02	-0.74	0.71	-0.03	0.14
3550	3548.13	-0.84	0.05	-0.80	0.79	0.00	0.14
3750	3758.37	-0.93	0.07	-0.86	0.87	0.01	0.15
4000	3981.07	-1.03	0.08	-0.95	0.96	0.01	0.15
4250	4216.97	-1.15	0.08	-1.07	1.05	-0.02	0.15
4500	4466.84	-1.27	0.06	-1.21	1.16	-0.05	0.16
4750	4731.51	-1.41	0.08	-1.33	1.27	-0.06	0.16
5000	5011.87	-1.55	0.15	-1.40	1.39	-0.01	0.16
5300	5308.84	-1.71	0.21	-1.51	1.51	0.00	0.17
5600	5623.41	-1.88	0.26	-1.63	1.64	0.01	0.17
6000	5956.62	-2.07	0.32	-1.75	1.78	0.03	0.17
6300	6309.57	-2.26	0.35	-1.92	1.93	0.01	0.18
6700	6683.44	-2.50	0.43	-2.08	2.08	0.00	0.18
7100	7079.46	-2.76	0.51	-2.24	2.24	0.00	0.18
7500	7498.94	-3.03	0.65	-2.38	2.40	0.02	0.19
8000	7943.28	-3.28	0.76	-2.52	2.57	0.05	0.19
8500	8413.95	-3.58	0.84	-2.74	2.74	0.00	0.22
9000	8912.51	-3.89	0.98	-2.90	2.91	0.01	0.25
9500	9440.61	-4.23	1.13	-3.10	3.08	-0.02	0.28
10000	10000	-4.60	1.33	-3.26	3.26	0.00	0.31
10600	10592.5	-4.99	1.54	-3.45	3.44	-0.01	0.34
11200	11220.2	-5.39	1.75	-3.63	3.62	-0.01	0.37

Frequenza Nominale	Frequenza esatta (6 cifre)	Risposta attuatore microfono dB	Correzione microfono campo libero dB	Risposta microfono campo libero dB	Risposta ai campi elettrici dB	Risposta acustica dB	Incertezza estesa dB
11800	11885	-5.79	1.98	-3.81	3.81	0.00	0.40
12500	12589.3	-6.19	2.23	-3.96	4.01	0.05	0.43
13200	13335.2	-6.58	2.35	-4.22	4.23	0.01	0.46
14000	14125.4	-6.95	2.48	-4.48	4.48	0.00	0.49
15000	14962.4	-7.33	2.56	-4.77	4.74	-0.03	0.52
16000	15848.9	-7.69	2.60	-5.10	5.03	-0.07	0.55
17000	16788	-8.05	2.72	-5.33	5.34	0.01	0.57
18000	17782.8	-8.38	2.74	-5.65	5.67	0.02	0.59
19000	18836.5	-8.71	2.72	-5.98	5.98	0.00	0.61
20000	19952.6	-9.07	2.67	-6.40	6.27	-0.13	0.63
21200	21134.9	-9.42	2.61	-6.82	6.50	-0.32	0.65
22400	22387.2	-9.77	2.45	-7.32	6.64	-0.68	0.67

Tabella A.8 Risposta in frequenza in campo diffuso per schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con o senza preamplificatore collegato ad un cavo d'estensione

Frequenza nominale	Frequenza esatta (6 cifre)	Risposta microfono campo diffuso (dalla tabella A.7) dB	Incertezza estesa dB	Influenza schermo antivento dB	Incertezza estesa dB	Risposta elettrica dB	Risposta acustica dB	Incertezza estesa dB
63	63.0957	0.00	0.05	0.00	0.05	0.00	0.00	0.07
80	79.4328	0.00	0.05	0.00	0.05	0.00	0.00	0.07
100	100	0.00	0.05	0.00	0.05	0.00	0.00	0.07
125	125.893	0.00	0.05	0.00	0.05	0.00	0.00	0.07
160	158.489	0.00	0.05	0.00	0.05	0.00	0.00	0.07
200	199.526	0.00	0.05	0.00	0.05	0.00	0.00	0.07
250	251.189	0.00	0.05	0.01	0.05	0.00	0.01	0.07
315	316.228	-0.01	0.06	0.02	0.05	0.00	0.01	0.08
400	398.107	-0.01	0.06	0.04	0.05	-0.01	0.02	0.08
500	501.187	-0.02	0.10	0.06	0.05	-0.01	0.03	0.11
630	630.957	-0.04	0.10	0.09	0.05	-0.02	0.03	0.11
800	794.328	-0.06	0.10	0.11	0.05	-0.03	0.02	0.11
1000	1000	-0.11	0.10	0.15	0.05	-0.06	-0.02	0.11
1060	1059.25	-0.12	0.10	0.18	0.08	-0.07	-0.01	0.13
1120	1122.02	-0.13	0.10	0.20	0.08	-0.08	0.00	0.13
1180	1188.5	-0.14	0.10	0.24	0.08	-0.09	0.01	0.13
1250	1258.93	-0.16	0.10	0.28	0.08	-0.10	0.02	0.13
1320	1333.52	-0.18	0.10	0.32	0.10	-0.12	0.02	0.14
1400	1412.54	-0.20	0.10	0.36	0.10	-0.13	0.03	0.14
1500	1496.24	-0.22	0.10	0.40	0.10	-0.15	0.03	0.14
1600	1584.89	-0.25	0.10	0.44	0.12	-0.18	0.01	0.16
1700	1678.8	-0.27	0.10	0.48	0.15	-0.20	0.01	0.18
1800	1778.28	-0.29	0.10	0.52	0.15	-0.23	0.00	0.18
1900	1883.65	-0.30	0.10	0.55	0.15	-0.25	0.00	0.18
2000	1995.26	-0.31	0.10	0.58	0.15	-0.28	-0.01	0.18
2120	2113.49	-0.32	0.10	0.62	0.15	-0.30	0.00	0.18
2240	2238.72	-0.34	0.11	0.64	0.15	-0.31	-0.01	0.19
2360	2371.37	-0.37	0.11	0.66	0.15	-0.30	-0.01	0.19
2500	2511.89	-0.41	0.12	0.68	0.15	-0.27	0.00	0.19
2650	2660.73	-0.47	0.12	0.68	0.15	-0.21	0.00	0.19
2800	2818.38	-0.54	0.13	0.66	0.15	-0.12	0.00	0.20
3000	2985.38	-0.61	0.13	0.61	0.15	0.00	0.01	0.20
3150	3162.28	-0.67	0.13	0.54	0.15	0.15	0.02	0.20
3350	3349.65	-0.74	0.14	0.45	0.15	0.32	0.04	0.20
3550	3548.13	-0.80	0.14	0.32	0.15	0.49	0.02	0.21
3750	3758.37	-0.86	0.15	0.18	0.15	0.68	0.00	0.21
4000	3981.07	-0.95	0.15	0.02	0.15	0.86	-0.07	0.21
4250	4216.97	-1.07	0.15	-0.13	0.15	1.05	-0.15	0.21
4500	4466.84	-1.21	0.16	-0.27	0.15	1.23	-0.25	0.22

Frequenza nominale	Frequenza esatta (6 cifre)	Risposta microfono campo diffuso (dalla tabella A.7) dB	Incertezza estesa dB	Influenza schermo antivento dB	Incertezza estesa dB	Risposta elettrica dB	Risposta acustica dB	Incertezza estesa dB
4750	4731.51	-1.33	0.16	-0.39	0.25	1.41	-0.31	0.30
5000	5011.87	-1.40	0.16	-0.46	0.35	1.59	-0.27	0.39
5300	5308.84	-1.51	0.17	-0.49	0.45	1.77	-0.23	0.48
5600	5623.41	-1.63	0.17	-0.48	0.50	1.96	-0.15	0.53
6000	5956.62	-1.75	0.17	-0.43	0.50	2.15	-0.03	0.53
6300	6309.57	-1.92	0.18	-0.38	0.50	2.35	0.05	0.53
6700	6683.44	-2.08	0.18	-0.34	0.50	2.55	0.13	0.53
7100	7079.46	-2.24	0.18	-0.36	0.50	2.77	0.17	0.53
7500	7498.94	-2.38	0.19	-0.45	0.50	2.99	0.16	0.53
8000	7943.28	-2.52	0.19	-0.58	0.50	3.22	0.12	0.53
8500	8413.95	-2.74	0.22	-0.71	0.50	3.45	0.00	0.55
9000	8912.51	-2.90	0.25	-0.79	0.50	3.69	0.00	0.56
9500	9440.61	-3.10	0.28	-0.82	0.50	3.94	0.02	0.57
10000	10000	-3.26	0.31	-0.82	0.50	4.20	0.12	0.59
10600	10592.5	-3.45	0.34	-0.87	0.80	4.46	0.14	0.87
11200	11220.2	-3.63	0.37	-0.96	0.80	4.72	0.13	0.88
11800	11885	-3.81	0.40	-1.07	0.80	4.98	0.10	0.89
12500	12589.3	-3.96	0.43	-1.19	0.80	5.25	0.10	0.91
13200	13335.2	-4.22	0.46	-1.31	0.80	5.51	-0.02	0.92
14000	14125.4	-4.48	0.49	-1.43	0.80	5.77	-0.14	0.94
15000	14962.4	-4.77	0.52	-1.53	0.80	6.02	-0.28	0.95
16000	15848.9	-5.10	0.55	-1.63	0.80	6.26	-0.47	0.97
17000	16788	-5.33	0.57	-1.77	0.80	6.49	-0.61	0.98
18000	17782.8	-5.65	0.59	-1.92	0.80	6.69	-0.88	0.99
19000	18836.5	-5.98	0.61	-1.98	0.80	6.87	-1.09	1.01
20000	19952.6	-6.40	0.63	-2.07	0.80	7.02	-1.45	1.02
21200	21134.9	-6.82	0.65	-2.18	0.80	7.13	-1.87	1.03
22400	22387.2	-7.32	0.67	-2.19	0.80	7.18	-2.33	1.04

Tabella A.9 Il microfono 4191 non ha specifiche con il kit per microfono da esterni UA-1404

A.4 Risposte in frequenza in campo libero per strumenti calibrati per campo diffuso

Risposta in frequenza in campo libero nella direzione di riferimento per strumenti calibrati per campo diffuso in accordo alle normative IEC 60651 e IEC 60804. Misurata con onde sonore sinusoidali progressive piane provenienti da una direzione di riferimento e con il parametro dello strumento *Correz. campo sonoro* impostato su *Campo diffuso*, si veda la sezione 4.6.7

Tabella A.10 Risposta in frequenza in campo libero a 0° con il parametro *Correz. campo sonoro* impostato su *Campo diffuso* per configurazioni in cui sono presenti specifiche risposte normali di un campo libero

Frequenza nominale	Frequenza esatta (6 cifre)	Configurazione come nella tabella A.2 dB	Configurazione come nella tabella A.3 dB	Configurazione come nella tabella A.4 dB	Configurazione come nella tabella A.5 dB
63	63.0957	0.00	0.00	0.00	0.00
80	79.4328	0.00	0.00	0.00	0.00
100	100	0.00	0.00	0.00	0.00
125	125.893	0.00	0.00	0.00	0.00
160	158.489	0.00	0.01	0.00	0.01
200	199.526	0.00	0.03	0.00	0.03
250	251.189	0.01	0.08	0.02	0.09
315	316.228	0.02	0.15	0.04	0.17
400	398.107	0.02	0.23	0.05	0.26
500	501.187	0.04	0.26	0.09	0.31
630	630.957	0.04	0.11	0.10	0.17

Frequenza nominale	Frequenza esatta (6 cifre)	Configurazione come nella tabella A.2 dB	Configurazione come nella tabella A.3 dB	Configurazione come nella tabella A.4 dB	Configurazione come nella tabella A.5 dB
800	794.328	0.07	-0.04	0.13	0.02
1000	1000	0.09	-0.01	0.15	0.05
1060	1059.25	0.10	-0.04	0.17	0.03
1120	1122.02	0.11	-0.10	0.19	-0.02
1180	1188.5	0.12	-0.17	0.22	-0.07
1250	1258.93	0.13	-0.18	0.24	-0.07
1320	1333.52	0.15	-0.08	0.27	0.04
1400	1412.54	0.17	0.06	0.31	0.20
1500	1496.24	0.19	0.19	0.34	0.34
1600	1584.89	0.21	0.24	0.36	0.39
1700	1678.8	0.22	0.20	0.37	0.35
1800	1778.28	0.24	0.11	0.38	0.25
1900	1883.65	0.27	0.10	0.41	0.24
2000	1995.26	0.30	0.20	0.41	0.31
2120	2113.49	0.33	0.38	0.42	0.47
2240	2238.72	0.35	0.39	0.41	0.45
2360	2371.37	0.39	0.06	0.43	0.10
2500	2511.89	0.43	0.25	0.46	0.28
2650	2660.73	0.48	0.57	0.50	0.59
2800	2818.38	0.52	0.50	0.56	0.54
3000	2985.38	0.58	0.39	0.63	0.44
3150	3162.28	0.63	0.74	0.69	0.80
3350	3349.65	0.70	0.84	0.75	0.89
3550	3548.13	0.78	0.68	0.78	0.68
3750	3758.37	0.86	0.93	0.83	0.90
4000	3981.07	0.95	0.99	0.89	0.93
4250	4216.97	1.04	0.94	0.99	0.89
4500	4466.84	1.15	1.28	1.09	1.22
4750	4731.51	1.26	1.09	1.22	1.05
5000	5011.87	1.38	1.26	1.39	1.27
5300	5308.84	1.49	1.25	1.58	1.34
5600	5623.41	1.62	1.56	1.78	1.72
6000	5956.62	1.78	1.65	2.02	1.89
6300	6309.57	1.93	1.94	2.24	2.25
6700	6683.44	2.08	2.08	2.39	2.39
7100	7079.46	2.23	2.24	2.48	2.49
7500	7498.94	2.39	2.48	2.62	2.71
8000	7943.28	2.62	2.43	2.86	2.67
8500	8413.95	2.80	2.51	3.04	2.75
9000	8912.51	3.03	2.89	3.36	3.22
9500	9440.61	3.22	3.23	3.61	3.62
10000	10000	3.46	3.42	3.88	3.84
10600	10592.5	3.68	3.65	4.07	4.04
11200	11220.2	3.91	3.69	4.27	4.05
11800	11885	4.18	3.95	4.49	4.26
12500	12589.3	4.50	4.47	4.86	4.83
13200	13335.2	4.76	4.77	5.04	5.05
14000	14125.4	5.02	4.97	5.18	5.13
15000	14962.4	5.30	5.17	5.37	5.24
16000	15848.9	5.55	5.51	5.45	5.41
17000	16788	5.96	6.07	5.61	5.72
18000	17782.8	6.30	6.19	5.71	5.60
19000	18836.5	6.59	6.49	5.84	5.74
20000	19952.6	6.82	6.88	5.84	5.90
21200	21134.9	6.98	6.79	5.80	5.61
22400	22387.2	6.99	6.55	5.74	5.30

A.5 Risposte direzionali

Risposte direzionali, compreso le variazioni di sensibilità, per onde sinusoidali progressive piane normalizzate alla risposta nella direzione di riferimento.

Tabella A.11 Risposta direzionale per microfono 4191 e preamplificatore microfono ZC-0032, con preamplificatore collegato ad un cavo d'estensione, 500 Hz – 3550 Hz, in dB

Angolo	Frequenza											
	500 Hz	630 Hz	800 Hz	1000 Hz	1250 Hz	1600 Hz	2000 Hz	2240 Hz	2500 Hz	2800 Hz	3150 Hz	3550 Hz
0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5°	0.00	0.00	0.00	-0.02	-0.01	-0.01	0.00	0.00	-0.01	-0.02	-0.01	-0.01
10°	0.01	0.00	0.00	-0.01	-0.01	-0.01	0.00	0.00	-0.01	-0.03	-0.02	-0.01
15°	0.01	0.01	0.00	-0.02	-0.02	-0.02	-0.01	-0.01	-0.03	-0.05	-0.03	-0.03
20°	0.01	0.01	0.00	-0.01	-0.01	-0.03	-0.01	-0.02	-0.04	-0.07	-0.06	-0.06
25°	0.02	0.01	0.00	-0.02	-0.02	-0.04	-0.03	-0.02	-0.06	-0.11	-0.10	-0.09
30°	0.02	0.01	0.00	-0.02	-0.04	-0.06	-0.04	-0.03	-0.08	-0.15	-0.15	-0.15
35°	0.01	0.01	-0.01	-0.04	-0.05	-0.08	-0.06	-0.06	-0.10	-0.18	-0.20	-0.21
40°	0.01	0.00	-0.02	-0.04	-0.06	-0.10	-0.08	-0.08	-0.13	-0.22	-0.26	-0.28
45°	0.00	-0.01	-0.03	-0.05	-0.08	-0.12	-0.11	-0.09	-0.15	-0.26	-0.32	-0.35
50°	0.00	-0.02	-0.04	-0.05	-0.09	-0.14	-0.13	-0.12	-0.17	-0.30	-0.38	-0.43
55°	-0.01	-0.02	-0.04	-0.07	-0.10	-0.17	-0.17	-0.14	-0.19	-0.33	-0.43	-0.50
60°	-0.02	-0.03	-0.05	-0.08	-0.12	-0.19	-0.20	-0.17	-0.22	-0.37	-0.49	-0.56
65°	-0.02	-0.04	-0.06	-0.10	-0.13	-0.21	-0.24	-0.20	-0.25	-0.41	-0.55	-0.63
70°	-0.03	-0.04	-0.07	-0.11	-0.15	-0.24	-0.28	-0.25	-0.29	-0.44	-0.60	-0.70
75°	-0.03	-0.05	-0.08	-0.12	-0.17	-0.26	-0.31	-0.29	-0.32	-0.47	-0.65	-0.77
80°	-0.04	-0.06	-0.09	-0.14	-0.19	-0.28	-0.35	-0.33	-0.37	-0.50	-0.69	-0.83
85°	-0.04	-0.07	-0.09	-0.14	-0.20	-0.31	-0.38	-0.37	-0.41	-0.54	-0.73	-0.89
90°	-0.05	-0.07	-0.10	-0.16	-0.21	-0.33	-0.42	-0.41	-0.45	-0.58	-0.76	-0.94
95°	-0.05	-0.08	-0.11	-0.16	-0.23	-0.35	-0.44	-0.45	-0.50	-0.62	-0.80	-0.98
100°	-0.05	-0.08	-0.11	-0.18	-0.25	-0.37	-0.48	-0.49	-0.54	-0.66	-0.84	-1.02
105°	-0.06	-0.08	-0.12	-0.18	-0.25	-0.38	-0.50	-0.52	-0.58	-0.71	-0.88	-1.05
110°	-0.06	-0.09	-0.12	-0.19	-0.26	-0.40	-0.52	-0.55	-0.62	-0.75	-0.92	-1.09
115°	-0.06	-0.09	-0.12	-0.19	-0.26	-0.40	-0.53	-0.57	-0.65	-0.79	-0.96	-1.14
120°	-0.07	-0.09	-0.13	-0.19	-0.26	-0.40	-0.53	-0.58	-0.66	-0.82	-1.00	-1.18
125°	-0.06	-0.09	-0.12	-0.18	-0.26	-0.39	-0.53	-0.58	-0.66	-0.83	-1.02	-1.21
130°	-0.06	-0.09	-0.12	-0.17	-0.24	-0.38	-0.53	-0.57	-0.66	-0.83	-1.02	-1.23
135°	-0.06	-0.08	-0.12	-0.16	-0.24	-0.37	-0.51	-0.55	-0.64	-0.81	-1.01	-1.22
140°	-0.06	-0.08	-0.11	-0.17	-0.23	-0.35	-0.48	-0.52	-0.61	-0.78	-0.98	-1.20
145°	-0.05	-0.08	-0.11	-0.16	-0.22	-0.34	-0.46	-0.49	-0.57	-0.73	-0.93	-1.15
150°	-0.05	-0.08	-0.11	-0.15	-0.21	-0.32	-0.43	-0.45	-0.53	-0.68	-0.87	-1.07
155°	-0.05	-0.07	-0.10	-0.14	-0.20	-0.31	-0.40	-0.42	-0.49	-0.63	-0.80	-1.00
160°	-0.05	-0.07	-0.10	-0.14	-0.19	-0.29	-0.38	-0.39	-0.45	-0.58	-0.75	-0.93
165°	-0.05	-0.07	-0.10	-0.13	-0.18	-0.28	-0.36	-0.37	-0.42	-0.54	-0.69	-0.86
170°	-0.04	-0.07	-0.10	-0.13	-0.18	-0.27	-0.34	-0.35	-0.40	-0.51	-0.65	-0.82
175°	-0.04	-0.06	-0.09	-0.13	-0.17	-0.27	-0.34	-0.34	-0.38	-0.49	-0.63	-0.79
180°	-0.04	-0.06	-0.09	-0.12	-0.18	-0.26	-0.33	-0.33	-0.37	-0.48	-0.62	-0.78
185°	-0.04	-0.06	-0.09	-0.14	-0.18	-0.26	-0.33	-0.34	-0.38	-0.49	-0.63	-0.79
190°	-0.04	-0.07	-0.10	-0.13	-0.18	-0.27	-0.35	-0.35	-0.40	-0.51	-0.65	-0.82
195°	-0.05	-0.07	-0.10	-0.14	-0.18	-0.28	-0.36	-0.37	-0.42	-0.53	-0.69	-0.86
200°	-0.05	-0.07	-0.10	-0.13	-0.19	-0.29	-0.38	-0.40	-0.45	-0.58	-0.74	-0.92
205°	-0.05	-0.07	-0.10	-0.15	-0.21	-0.31	-0.41	-0.43	-0.49	-0.63	-0.80	-1.00
210°	-0.05	-0.08	-0.11	-0.15	-0.21	-0.32	-0.43	-0.46	-0.53	-0.68	-0.86	-1.07
215°	-0.05	-0.08	-0.11	-0.15	-0.22	-0.34	-0.46	-0.50	-0.57	-0.72	-0.92	-1.15
220°	-0.06	-0.08	-0.11	-0.17	-0.24	-0.36	-0.48	-0.52	-0.60	-0.77	-0.97	-1.20
225°	-0.06	-0.08	-0.12	-0.17	-0.24	-0.37	-0.51	-0.55	-0.63	-0.80	-1.01	-1.23
230°	-0.06	-0.09	-0.12	-0.17	-0.25	-0.38	-0.52	-0.57	-0.66	-0.82	-1.02	-1.24
235°	-0.06	-0.09	-0.12	-0.17	-0.26	-0.40	-0.54	-0.58	-0.67	-0.83	-1.02	-1.23
240°	-0.07	-0.09	-0.13	-0.18	-0.26	-0.40	-0.54	-0.59	-0.66	-0.82	-1.00	-1.20
245°	-0.06	-0.09	-0.12	-0.18	-0.26	-0.40	-0.54	-0.57	-0.65	-0.80	-0.96	-1.16
250°	-0.06	-0.09	-0.12	-0.18	-0.26	-0.40	-0.53	-0.56	-0.63	-0.76	-0.92	-1.11
255°	-0.06	-0.08	-0.12	-0.18	-0.26	-0.39	-0.51	-0.54	-0.59	-0.72	-0.87	-1.06
260°	-0.05	-0.08	-0.11	-0.17	-0.25	-0.37	-0.49	-0.51	-0.56	-0.67	-0.82	-1.02
265°	-0.05	-0.08	-0.11	-0.17	-0.23	-0.36	-0.47	-0.48	-0.51	-0.62	-0.78	-0.98
270°	-0.05	-0.07	-0.10	-0.16	-0.22	-0.35	-0.44	-0.43	-0.46	-0.57	-0.74	-0.95
275°	-0.04	-0.07	-0.09	-0.13	-0.21	-0.32	-0.40	-0.39	-0.41	-0.53	-0.71	-0.92
280°	-0.04	-0.06	-0.09	-0.14	-0.19	-0.30	-0.37	-0.34	-0.36	-0.49	-0.69	-0.89
285°	-0.03	-0.05	-0.08	-0.12	-0.18	-0.28	-0.33	-0.29	-0.31	-0.46	-0.67	-0.84
290°	-0.03	-0.04	-0.07	-0.11	-0.16	-0.25	-0.29	-0.25	-0.28	-0.44	-0.64	-0.77
295°	-0.02	-0.04	-0.06	-0.10	-0.14	-0.23	-0.24	-0.20	-0.25	-0.42	-0.60	-0.70
300°	-0.02	-0.03	-0.05	-0.08	-0.13	-0.20	-0.20	-0.17	-0.22	-0.40	-0.55	-0.60
305°	-0.01	-0.02	-0.04	-0.07	-0.12	-0.18	-0.17	-0.14	-0.20	-0.37	-0.48	-0.51
310°	0.00	-0.02	-0.04	-0.05	-0.10	-0.15	-0.13	-0.11	-0.18	-0.33	-0.41	-0.42
315°	0.00	-0.01	-0.03	-0.04	-0.08	-0.12	-0.10	-0.09	-0.17	-0.30	-0.34	-0.35
320°	0.01	0.00	-0.02	-0.03	-0.06	-0.10	-0.08	-0.08	-0.14	-0.25	-0.27	-0.27
325°	0.01	0.01	-0.01	-0.03	-0.05	-0.08	-0.06	-0.05	-0.12	-0.20	-0.20	-0.21
330°	0.02	0.01	0.00	-0.01	-0.03	-0.05	-0.04	-0.05	-0.10	-0.15	-0.15	-0.15
335°	0.02	0.01	0.00	0.01	-0.02	-0.04	-0.02	-0.03	-0.07	-0.11	-0.10	-0.10
340°	0.01	0.01	0.00	0.01	-0.02	-0.02	-0.01	-0.01	-0.05	-0.07	-0.06	-0.06
345°	0.01	0.01	0.00	0.02	0.00	-0.01	0.00	0.00	-0.04	-0.04	-0.03	-0.03
350°	0.01	0.00	0.00	0.02	0.00	0.00	0.01	0.00	-0.01	-0.02	-0.01	0.00
355°	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.01	-0.01	-0.01	0.01	0.01

Tabella A.12 Risposta direzionale per microfono 4191 e preamplificatore microfono ZC-0032, con preamplificatore collegato ad un cavo d'estensione, 4000 Hz – 10600 Hz, in dB

Angolo	Frequenza											
	4000 Hz	4500 Hz	5000 Hz	5600 Hz	6300 Hz	7100 Hz	8000 Hz	8500 Hz	9000 Hz	9500 Hz	10000 Hz	10600 Hz
0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5°	-0.02	-0.02	-0.01	-0.03	-0.01	-0.01	-0.02	-0.02	-0.03	-0.01	-0.01	-0.03
10°	-0.02	-0.05	-0.02	-0.07	-0.03	-0.03	-0.06	-0.06	-0.11	-0.05	-0.09	-0.07
15°	-0.04	-0.08	-0.04	-0.11	-0.05	-0.10	-0.13	-0.11	-0.23	-0.10	-0.20	-0.13
20°	-0.08	-0.15	-0.08	-0.17	-0.10	-0.21	-0.24	-0.19	-0.40	-0.22	-0.34	-0.26
25°	-0.11	-0.22	-0.16	-0.23	-0.18	-0.36	-0.35	-0.32	-0.57	-0.41	-0.47	-0.45
30°	-0.16	-0.30	-0.27	-0.28	-0.30	-0.52	-0.47	-0.49	-0.72	-0.69	-0.60	-0.73
35°	-0.20	-0.38	-0.41	-0.33	-0.45	-0.69	-0.57	-0.72	-0.86	-1.01	-0.78	-1.03
40°	-0.27	-0.45	-0.57	-0.38	-0.63	-0.85	-0.69	-0.94	-1.03	-1.30	-1.11	-1.27
45°	-0.34	-0.51	-0.74	-0.48	-0.79	-1.00	-0.86	-1.09	-1.32	-1.46	-1.56	-1.51
50°	-0.44	-0.58	-0.89	-0.66	-0.92	-1.16	-1.13	-1.19	-1.66	-1.65	-1.89	-1.96
55°	-0.55	-0.67	-0.98	-0.90	-1.03	-1.34	-1.47	-1.37	-1.86	-2.02	-1.99	-2.55
60°	-0.65	-0.79	-1.05	-1.14	-1.17	-1.52	-1.77	-1.72	-1.98	-2.41	-2.22	-2.85
65°	-0.74	-0.94	-1.14	-1.28	-1.44	-1.69	-1.95	-2.07	-2.29	-2.62	-2.63	-3.02
70°	-0.82	-1.09	-1.29	-1.34	-1.77	-1.86	-2.14	-2.24	-2.74	-2.95	-2.88	-3.40
75°	-0.87	-1.19	-1.50	-1.39	-2.03	-2.11	-2.44	-2.39	-2.90	-3.49	-3.21	-3.64
80°	-0.93	-1.26	-1.71	-1.51	-2.14	-2.42	-2.74	-2.77	-2.93	-3.66	-3.85	-3.85
85°	-0.99	-1.29	-1.84	-1.74	-2.20	-2.70	-2.94	-3.24	-3.31	-3.57	-4.11	-4.40
90°	-1.06	-1.34	-1.91	-1.96	-2.32	-2.89	-3.10	-3.49	-3.86	-3.90	-4.06	-4.75
95°	-1.12	-1.40	-1.92	-2.09	-2.52	-3.04	-3.31	-3.59	-4.13	-4.42	-4.43	-4.91
100°	-1.17	-1.46	-1.97	-2.15	-2.69	-3.19	-3.57	-3.80	-4.25	-4.65	-4.94	-5.27
105°	-1.21	-1.51	-2.02	-2.17	-2.79	-3.33	-3.75	-4.04	-4.48	-4.81	-5.19	-5.55
110°	-1.24	-1.54	-2.07	-2.19	-2.84	-3.43	-3.84	-4.17	-4.72	-5.04	-5.40	-5.85
115°	-1.29	-1.57	-2.10	-2.20	-2.85	-3.48	-3.91	-4.24	-4.85	-5.20	-5.57	-6.13
120°	-1.33	-1.60	-2.13	-2.21	-2.83	-3.49	-3.94	-4.31	-4.93	-5.33	-5.67	-6.23
125°	-1.37	-1.65	-2.18	-2.22	-2.80	-3.46	-3.93	-4.30	-4.94	-5.36	-5.72	-6.34
130°	-1.40	-1.69	-2.24	-2.26	-2.83	-3.45	-3.84	-4.21	-4.85	-5.21	-5.56	-6.31
135°	-1.41	-1.71	-2.28	-2.31	-2.89	-3.50	-3.82	-4.14	-4.73	-5.05	-5.33	-6.02
140°	-1.40	-1.70	-2.29	-2.34	-2.96	-3.58	-3.89	-4.17	-4.77	-5.06	-5.29	-5.80
145°	-1.34	-1.64	-2.24	-2.31	-2.97	-3.64	-3.98	-4.28	-4.90	-5.20	-5.47	-5.87
150°	-1.26	-1.55	-2.15	-2.21	-2.89	-3.60	-3.98	-4.30	-4.99	-5.26	-5.64	-6.07
155°	-1.17	-1.44	-2.03	-2.06	-2.73	-3.46	-3.83	-4.16	-4.89	-5.14	-5.56	-6.05
160°	-1.08	-1.33	-1.89	-1.89	-2.54	-3.23	-3.59	-3.89	-4.64	-4.86	-5.24	-5.73
165°	-1.01	-1.23	-1.78	-1.74	-2.35	-3.00	-3.33	-3.60	-4.32	-4.52	-4.84	-5.30
170°	-0.94	-1.15	-1.68	-1.62	-2.19	-2.81	-3.09	-3.33	-4.03	-4.23	-4.49	-4.90
175°	-0.91	-1.11	-1.63	-1.54	-2.09	-2.69	-2.95	-3.16	-3.84	-4.04	-4.27	-4.64
180°	-0.90	-1.09	-1.60	-1.51	-2.05	-2.64	-2.88	-3.08	-3.76	-3.97	-4.20	-4.57
185°	-0.91	-1.10	-1.63	-1.54	-2.08	-2.67	-2.92	-3.12	-3.81	-4.05	-4.30	-4.66
190°	-0.94	-1.15	-1.69	-1.62	-2.16	-2.78	-3.05	-3.27	-4.00	-4.27	-4.55	-4.93
195°	-1.00	-1.23	-1.79	-1.73	-2.30	-2.95	-3.27	-3.53	-4.31	-4.61	-4.90	-5.29
200°	-1.08	-1.33	-1.91	-1.88	-2.47	-3.16	-3.54	-3.85	-4.67	-4.96	-5.26	-5.63
205°	-1.17	-1.43	-2.05	-2.03	-2.65	-3.38	-3.80	-4.15	-4.94	-5.20	-5.48	-5.86
210°	-1.27	-1.55	-2.18	-2.16	-2.81	-3.56	-3.95	-4.31	-5.03	-5.28	-5.56	-5.94
215°	-1.34	-1.64	-2.26	-2.26	-2.90	-3.64	-3.98	-4.30	-4.97	-5.25	-5.52	-5.88
220°	-1.40	-1.70	-2.30	-2.29	-2.91	-3.62	-3.90	-4.22	-4.90	-5.20	-5.43	-5.79
225°	-1.43	-1.71	-2.30	-2.28	-2.88	-3.56	-3.84	-4.15	-4.87	-5.17	-5.36	-5.85
230°	-1.43	-1.69	-2.26	-2.25	-2.80	-3.49	-3.85	-4.14	-4.87	-5.21	-5.43	-6.06
235°	-1.40	-1.65	-2.21	-2.19	-2.74	-3.47	-3.87	-4.17	-4.91	-5.36	-5.55	-6.15
240°	-1.36	-1.61	-2.16	-2.14	-2.71	-3.50	-3.91	-4.22	-4.97	-5.40	-5.48	-5.98
245°	-1.31	-1.56	-2.10	-2.11	-2.73	-3.55	-3.91	-4.21	-4.92	-5.20	-5.31	-5.85
250°	-1.27	-1.51	-2.06	-2.12	-2.77	-3.53	-3.83	-4.11	-4.76	-5.00	-5.30	-5.81
255°	-1.22	-1.48	-2.04	-2.16	-2.75	-3.40	-3.68	-4.00	-4.61	-4.91	-5.26	-5.61
260°	-1.18	-1.45	-2.03	-2.17	-2.62	-3.21	-3.55	-3.88	-4.47	-4.74	-4.89	-5.23
265°	-1.15	-1.43	-2.01	-2.08	-2.41	-3.12	-3.38	-3.68	-4.25	-4.39	-4.40	-4.96
270°	-1.11	-1.40	-1.97	-1.90	-2.25	-3.06	-3.09	-3.43	-3.93	-3.95	-4.15	-4.81
275°	-1.07	-1.34	-1.86	-1.69	-2.20	-2.85	-2.83	-3.21	-3.51	-3.66	-4.14	-4.46
280°	-1.01	-1.27	-1.70	-1.53	-2.18	-2.48	-2.70	-2.89	-3.11	-3.63	-3.91	-4.04
285°	-0.93	-1.17	-1.51	-1.45	-2.01	-2.13	-2.51	-2.46	-2.95	-3.54	-3.38	-3.77
290°	-0.84	-1.07	-1.35	-1.40	-1.70	-1.95	-2.17	-2.18	-2.89	-3.15	-2.93	-3.45
295°	-0.74	-0.95	-1.23	-1.29	-1.38	-1.83	-1.86	-2.09	-2.59	-2.72	-2.56	-3.10
300°	-0.64	-0.84	-1.14	-1.08	-1.17	-1.62	-1.71	-1.89	-2.18	-2.40	-2.20	-2.89
305°	-0.55	-0.73	-1.04	-0.84	-1.06	-1.35	-1.56	-1.53	-1.88	-2.07	-1.95	-2.56
310°	-0.46	-0.66	-0.90	-0.63	-0.96	-1.14	-1.27	-1.22	-1.69	-1.75	-1.77	-2.05
315°	-0.38	-0.57	-0.73	-0.48	-0.82	-1.01	-0.92	-1.03	-1.44	-1.50	-1.48	-1.67
320°	-0.31	-0.49	-0.55	-0.40	-0.63	-0.93	-0.64	-0.90	-1.18	-1.27	-1.13	-1.39
325°	-0.24	-0.40	-0.39	-0.35	-0.44	-0.82	-0.48	-0.75	-0.97	-0.99	-0.84	-1.06
330°	-0.19	-0.31	-0.24	-0.30	-0.27	-0.65	-0.40	-0.57	-0.78	-0.71	-0.66	-0.69
335°	-0.14	-0.22	-0.15	-0.22	-0.17	-0.46	-0.32	-0.40	-0.59	-0.47	-0.49	-0.40
340°	-0.10	-0.13	-0.07	-0.17	-0.10	-0.30	-0.24	-0.26	-0.41	-0.29	-0.32	-0.22
345°	-0.07	-0.07	-0.02	-0.10	-0.05	-0.17	-0.15	-0.15	-0.24	-0.17	-0.15	-0.13
350°	-0.04	-0.02	0.01	-0.05	-0.01	-0.07	-0.09	-0.08	-0.10	-0.09	-0.03	-0.08
355°	-0.02	0.01	0.02	-0.02	0.01	-0.02	-0.03	-0.04	-0.01	-0.05	0.05	-0.06

Tabella A.13 Risposta direzionale per microfono 4191 e preamplificatore microfono ZC-0032, con preamplificatore collegato ad un cavo d'estensione, 11200 Hz – 20000 Hz, in dB

Angolo	Frequenza										
	11200 Hz	11800 Hz	12500 Hz	13200 Hz	14000 Hz	15000 Hz	16000 Hz	17000 Hz	18000 Hz	19000 Hz	20000 Hz
0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5°	-0.03	-0.02	-0.04	-0.03	-0.06	-0.01	-0.04	-0.04	-0.05	-0.07	-0.03
10°	-0.12	-0.08	-0.10	-0.12	-0.14	-0.08	-0.10	-0.17	-0.20	-0.23	-0.20
15°	-0.26	-0.15	-0.22	-0.30	-0.26	-0.19	-0.23	-0.38	-0.43	-0.48	-0.44
20°	-0.45	-0.25	-0.43	-0.55	-0.39	-0.45	-0.47	-0.70	-0.76	-0.80	-0.77
25°	-0.66	-0.40	-0.71	-0.79	-0.56	-0.85	-0.79	-1.02	-1.07	-1.12	-1.10
30°	-0.85	-0.64	-1.02	-1.02	-0.87	-1.34	-1.10	-1.27	-1.41	-1.53	-1.56
35°	-1.04	-1.00	-1.25	-1.32	-1.34	-1.69	-1.44	-1.59	-1.98	-2.13	-2.20
40°	-1.32	-1.40	-1.44	-1.81	-1.72	-1.99	-2.06	-2.20	-2.54	-2.57	-2.75
45°	-1.67	-1.69	-1.82	-2.21	-2.04	-2.58	-2.65	-2.78	-2.81	-3.11	-3.51
50°	-1.97	-2.01	-2.37	-2.43	-2.62	-3.15	-2.94	-3.43	-3.61	-3.82	-4.25
55°	-2.27	-2.47	-2.68	-2.98	-3.06	-3.54	-3.67	-4.14	-4.23	-4.26	-5.00
60°	-2.86	-2.90	-3.08	-3.57	-3.42	-4.17	-4.22	-4.62	-4.90	-5.42	-5.71
65°	-3.44	-3.25	-3.84	-3.72	-4.26	-4.45	-4.67	-5.50	-5.48	-6.01	-6.68
70°	-3.70	-3.74	-4.35	-4.41	-4.61	-5.09	-5.30	-5.73	-6.43	-6.98	-7.20
75°	-4.09	-4.05	-4.81	-4.99	-5.26	-5.64	-5.88	-6.48	-7.00	-7.51	-8.22
80°	-4.48	-4.41	-5.08	-5.49	-5.76	-6.53	-6.50	-7.07	-7.82	-8.01	-9.04
85°	-4.67	-5.12	-5.19	-6.04	-6.09	-7.21	-7.16	-8.01	-7.98	-9.21	-9.62
90°	-4.99	-5.46	-6.06	-6.00	-6.82	-7.26	-7.96	-8.37	-9.28	-9.41	-10.31
95°	-5.36	-5.46	-6.50	-6.83	-6.96	-7.87	-8.10	-9.15	-9.63	-10.44	-11.15
100°	-5.74	-5.87	-6.43	-7.11	-7.71	-8.43	-8.83	-9.28	-9.28	-10.87	-11.92
105°	-5.95	-6.39	-7.02	-7.20	-7.73	-8.84	-9.25	-10.01	-10.49	-11.24	-12.32
110°	-6.18	-6.46	-7.32	-7.87	-8.19	-8.97	-9.33	-10.41	-11.23	-11.96	-12.74
115°	-6.60	-6.78	-7.42	-7.91	-8.57	-9.63	-9.81	-10.63	-11.20	-12.22	-13.30
120°	-6.78	-7.13	-7.93	-8.27	-8.63	-9.65	-9.93	-11.24	-11.95	-12.48	-13.34
125°	-6.81	-7.07	-7.89	-8.50	-9.09	-10.06	-9.84	-11.13	-11.90	-12.90	-13.97
130°	-6.92	-7.20	-7.90	-8.38	-8.83	-10.11	-10.17	-11.54	-12.31	-12.74	-13.98
135°	-6.76	-7.11	-8.04	-8.56	-8.93	-10.02	-10.45	-11.25	-12.26	-13.08	-14.13
140°	-6.49	-6.74	-7.71	-8.34	-8.83	-10.05	-10.53	-11.43	-12.16	-12.72	-13.99
145°	-6.47	-6.67	-7.46	-8.03	-8.41	-9.49	-9.77	-11.12	-12.15	-12.75	-13.89
150°	-6.61	-6.90	-7.57	-8.11	-8.43	-9.41	-9.64	-10.43	-11.39	-12.17	-13.19
155°	-6.63	-7.05	-7.74	-8.30	-8.65	-9.71	-10.16	-10.76	-11.41	-12.03	-13.07
160°	-6.37	-6.85	-7.57	-8.17	-8.56	-9.63	-10.23	-11.15	-11.82	-12.42	-13.53
165°	-5.91	-6.38	-7.08	-7.67	-8.04	-8.99	-9.62	-10.65	-11.46	-12.17	-13.21
170°	-5.49	-5.92	-6.56	-7.11	-7.43	-8.28	-8.87	-9.82	-10.56	-11.30	-12.23
175°	-5.21	-5.62	-6.20	-6.71	-6.99	-7.75	-8.36	-9.19	-9.83	-10.58	-11.41
180°	-5.12	-5.51	-6.03	-6.54	-6.83	-7.56	-8.19	-8.96	-9.52	-10.27	-11.15
185°	-5.21	-5.60	-6.12	-6.62	-6.97	-7.72	-8.39	-9.05	-9.64	-10.50	-11.44
190°	-5.47	-5.86	-6.39	-6.98	-7.41	-8.18	-8.83	-9.50	-10.25	-11.25	-12.13
195°	-5.82	-6.25	-6.84	-7.57	-7.99	-8.73	-9.38	-10.21	-11.06	-12.00	-12.75
200°	-6.19	-6.67	-7.31	-8.03	-8.37	-9.15	-9.83	-10.74	-11.32	-12.24	-13.07
205°	-6.47	-6.93	-7.48	-8.10	-8.43	-9.33	-9.88	-10.58	-11.21	-12.11	-13.07
210°	-6.51	-6.88	-7.36	-8.02	-8.41	-9.19	-9.78	-10.50	-11.31	-12.06	-13.14
215°	-6.34	-6.76	-7.33	-8.04	-8.38	-9.14	-10.09	-10.61	-11.48	-12.38	-13.53
220°	-6.27	-6.81	-7.43	-8.11	-8.53	-9.45	-10.44	-10.86	-11.95	-12.83	-13.99
225°	-6.46	-6.95	-7.55	-8.33	-8.85	-9.74	-10.68	-11.15	-12.12	-12.86	-13.95
230°	-6.70	-7.04	-7.74	-8.51	-8.85	-9.75	-10.65	-10.97	-11.99	-12.76	-14.05
235°	-6.69	-7.00	-7.68	-8.32	-8.77	-9.68	-10.13	-11.01	-12.08	-12.82	-13.75
240°	-6.50	-6.91	-7.51	-8.28	-8.69	-9.61	-10.04	-10.79	-11.66	-12.13	-13.41
245°	-6.37	-6.85	-7.47	-8.17	-8.45	-9.31	-9.67	-10.26	-11.28	-11.94	-13.10
250°	-6.24	-6.73	-7.23	-7.81	-8.03	-8.81	-9.33	-10.12	-11.09	-11.65	-12.87
255°	-5.98	-6.37	-6.79	-7.37	-7.70	-8.68	-9.14	-9.78	-10.68	-11.18	-12.10
260°	-5.69	-5.92	-6.43	-7.17	-7.51	-8.29	-8.93	-9.19	-10.06	-10.76	-11.94
265°	-5.43	-5.54	-6.30	-6.86	-6.96	-7.99	-8.16	-8.80	-9.66	-10.49	-11.19
270°	-5.04	-5.41	-5.98	-6.17	-6.78	-7.21	-8.10	-8.24	-9.32	-9.37	-10.37
275°	-4.76	-5.16	-5.20	-6.05	-6.05	-7.06	-7.31	-7.78	-8.11	-9.04	-9.63
280°	-4.55	-4.41	-4.94	-5.55	-5.63	-6.71	-6.37	-7.07	-7.80	-7.90	-9.02
285°	-4.04	-3.99	-4.74	-4.99	-5.36	-5.63	-6.02	-6.31	-7.07	-7.42	-8.33
290°	-3.63	-3.73	-4.23	-4.59	-4.54	-5.22	-5.30	-5.66	-6.49	-6.92	-7.15
295°	-3.36	-3.23	-3.90	-3.75	-4.27	-4.53	-4.75	-5.31	-5.52	-6.12	-6.85
300°	-2.83	-2.96	-3.12	-3.50	-3.56	-4.19	-4.13	-4.68	-4.96	-5.49	-5.72
305°	-2.39	-2.52	-2.54	-3.19	-2.99	-3.71	-3.64	-4.10	-4.30	-4.37	-5.14
310°	-2.10	-1.88	-2.36	-2.53	-2.65	-3.24	-2.88	-3.43	-3.75	-3.82	-4.28
315°	-1.63	-1.58	-1.91	-2.20	-2.11	-2.71	-2.55	-2.76	-2.89	-3.23	-3.60
320°	-1.13	-1.46	-1.38	-1.92	-1.69	-2.11	-2.10	-2.23	-2.56	-2.56	-2.83
325°	-0.89	-1.12	-1.14	-1.47	-1.32	-1.76	-1.52	-1.57	-2.09	-2.17	-2.29
330°	-0.83	-0.67	-1.01	-1.07	-0.91	-1.39	-1.15	-1.21	-1.45	-1.58	-1.64
335°	-0.74	-0.35	-0.77	-0.78	-0.62	-0.91	-0.83	-1.04	-1.04	-1.10	-1.14
340°	-0.55	-0.19	-0.50	-0.55	-0.43	-0.52	-0.49	-0.75	-0.78	-0.78	-0.81
345°	-0.33	-0.09	-0.26	-0.32	-0.27	-0.28	-0.23	-0.42	-0.49	-0.47	-0.49
350°	-0.16	-0.03	-0.11	-0.15	-0.13	-0.14	-0.08	-0.16	-0.24	-0.22	-0.21
355°	-0.05	0.02	-0.03	-0.03	-0.02	-0.07	-0.01	-0.02	-0.08	-0.07	-0.04

Tabella A.14 Variazioni della sensibilità per microfono 4191 e preamplificatore microfono ZC-0032, con preamplificatore collegato ad un cavo d'estensione, agli angoli d'incidenza compresi tra $\pm\theta^\circ$ dalla direzione di riferimento

Frequenza nominale	Frequenza esatta	Variaz. max $\pm 30^\circ$ dB	Variaz. max $\pm 90^\circ$ dB	Variaz. max $\pm 150^\circ$ dB
500 Hz	501.187 Hz	0.02	0.07	0.08
630 Hz	630.957 Hz	0.01	0.08	0.10
800 Hz	794.328 Hz	0.00	0.10	0.13
1000 Hz	1000 Hz	0.04	0.18	0.21
1250 Hz	1258.93 Hz	0.04	0.22	0.27
1600 Hz	1584.89 Hz	0.06	0.35	0.40
2000 Hz	1995.26 Hz	0.05	0.45	0.55
2240 Hz	2238.72 Hz	0.06	0.44	0.60
2500 Hz	2511.89 Hz	0.10	0.46	0.67
2800 Hz	2818.38 Hz	0.15	0.58	0.83
3150 Hz	3162.28 Hz	0.16	0.77	1.03
3550 Hz	3548.13 Hz	0.16	0.97	1.26
4000 Hz	3981.07 Hz	0.19	1.11	1.43
4500 Hz	4466.84 Hz	0.33	1.41	1.72
5000 Hz	5011.87 Hz	0.30	1.99	2.33
5600 Hz	5623.41 Hz	0.30	1.96	2.34
6300 Hz	6309.57 Hz	0.31	2.33	2.98
7100 Hz	7079.46 Hz	0.65	3.06	3.64
8000 Hz	7943.28 Hz	0.47	3.10	3.98
8500 Hz	8413.95 Hz	0.57	3.49	4.31
9000 Hz	8912.51 Hz	0.78	3.93	5.03
9500 Hz	9440.61 Hz	0.71	3.95	5.40
10000 Hz	10000 Hz	0.71	4.20	5.78
10600 Hz	10592.5 Hz	0.73	4.81	6.34
11200 Hz	11220.2 Hz	0.85	5.04	6.92
11800 Hz	11885.0 Hz	0.69	5.47	7.22
12500 Hz	12589.3 Hz	1.02	6.06	8.04
13200 Hz	13335.2 Hz	1.07	6.17	8.56
14000 Hz	14125.4 Hz	0.91	6.82	9.09
15000 Hz	14962.4 Hz	1.39	7.26	10.11
16000 Hz	15848.9 Hz	1.15	8.10	10.68
17000 Hz	16788.0 Hz	1.27	8.37	11.54
18000 Hz	17782.8 Hz	1.45	9.32	12.31
19000 Hz	18836.5 Hz	1.58	9.41	13.08
20000 Hz	19952.6 Hz	1.64	10.37	14.13

Tabella A.15 Influenza dello strumento 2250/2270 sulla risposta direzionale, misurata in un piano parallelo al display e lungo l'asse del microfono, 500 Hz – 3550 Hz

Angolo	Frequenza											
	500 Hz	630 Hz	800 Hz	1000 Hz	1250 Hz	1600 Hz	2000 Hz	2240 Hz	2500 Hz	2800 Hz	3150 Hz	3550 Hz
0°	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5°	0.00	0.00	-0.01	0.02	0.00	0.00	-0.01	0.00	0.01	0.02	-0.01	0.00
10°	0.01	0.00	-0.01	0.02	-0.01	0.01	-0.02	0.01	-0.02	0.03	-0.02	-0.01
15°	0.01	-0.01	0.00	0.04	-0.02	0.01	-0.04	0.02	-0.04	0.05	-0.05	0.01
20°	0.01	0.00	-0.01	0.04	-0.05	0.02	-0.08	0.03	-0.07	0.07	-0.09	0.02
25°	0.01	0.00	0.00	0.06	-0.05	0.01	-0.11	0.04	-0.08	0.09	-0.12	0.05
30°	0.02	0.01	-0.01	0.09	-0.05	0.00	-0.14	0.03	-0.07	0.08	-0.13	0.06
35°	0.01	0.02	-0.01	0.12	-0.03	-0.04	-0.15	0.00	-0.02	0.04	-0.11	0.06
40°	0.03	0.05	0.00	0.13	0.00	-0.10	-0.13	-0.08	0.05	-0.03	-0.06	0.04
45°	0.04	0.09	0.02	0.13	0.05	-0.19	-0.08	-0.15	0.08	-0.09	-0.03	0.02
50°	0.03	0.10	0.05	0.13	0.11	-0.27	-0.02	-0.20	0.05	-0.07	-0.06	0.03
55°	0.02	0.11	0.09	0.14	0.17	-0.31	0.02	-0.18	-0.07	0.00	-0.14	0.05
60°	0.01	0.12	0.13	0.15	0.20	-0.28	-0.01	-0.08	-0.22	0.06	-0.19	0.03
65°	-0.01	0.11	0.17	0.18	0.22	-0.20	-0.13	0.01	-0.26	-0.03	-0.14	-0.02
70°	-0.03	0.10	0.21	0.23	0.22	-0.07	-0.29	-0.01	-0.13	-0.22	-0.09	-0.04
75°	-0.04	0.08	0.23	0.28	0.21	0.05	-0.38	-0.18	0.01	-0.30	-0.19	-0.02
80°	-0.05	0.06	0.24	0.36	0.22	0.12	-0.31	-0.38	-0.03	-0.18	-0.39	-0.04
85°	-0.06	0.04	0.24	0.41	0.25	0.15	-0.10	-0.42	-0.25	-0.07	-0.39	-0.22
90°	-0.11	-0.01	0.22	0.47	0.31	0.13	0.13	-0.21	-0.44	-0.21	-0.24	-0.38
95°	-0.13	-0.05	0.18	0.50	0.41	0.10	0.26	0.10	-0.29	-0.46	-0.25	-0.25
100°	-0.16	-0.11	0.12	0.50	0.51	0.13	0.26	0.31	0.12	-0.40	-0.49	-0.17
105°	-0.19	-0.16	0.05	0.45	0.57	0.20	0.19	0.31	0.43	0.06	-0.50	-0.34
110°	-0.20	-0.19	-0.03	0.38	0.58	0.31	0.17	0.20	0.44	0.47	-0.01	-0.29
115°	-0.21	-0.22	-0.12	0.27	0.52	0.37	0.27	0.16	0.26	0.50	0.46	0.25
120°	-0.21	-0.23	-0.18	0.14	0.41	0.34	0.41	0.27	0.17	0.25	0.46	0.71
125°	-0.22	-0.25	-0.23	0.02	0.26	0.21	0.48	0.45	0.30	0.13	0.14	0.59
130°	-0.22	-0.25	-0.26	-0.08	0.09	0.00	0.39	0.50	0.50	0.29	0.03	0.18
135°	-0.20	-0.23	-0.27	-0.13	-0.03	-0.24	0.11	0.31	0.50	0.45	0.26	0.17
140°	-0.19	-0.22	-0.25	-0.14	-0.09	-0.42	-0.25	-0.06	0.20	0.32	0.35	0.43
145°	-0.18	-0.19	-0.21	-0.12	-0.10	-0.50	-0.53	-0.46	-0.28	-0.15	0.01	0.34
150°	-0.15	-0.16	-0.17	-0.08	-0.05	-0.46	-0.66	-0.70	-0.68	-0.68	-0.62	-0.25
155°	-0.14	-0.14	-0.13	-0.02	0.03	-0.34	-0.59	-0.70	-0.80	-0.95	-1.12	-0.92
160°	-0.12	-0.10	-0.09	0.05	0.12	-0.19	-0.41	-0.51	-0.64	-0.85	-1.15	-1.14
165°	-0.11	-0.09	-0.05	0.10	0.21	-0.05	-0.20	-0.25	-0.34	-0.52	-0.81	-0.85
170°	-0.10	-0.07	-0.02	0.14	0.28	0.06	-0.02	-0.03	-0.06	-0.18	-0.41	-0.38
175°	-0.10	-0.07	-0.01	0.18	0.32	0.14	0.10	0.12	0.12	0.06	-0.11	-0.02
180°	-0.08	-0.05	0.00	0.18	0.33	0.15	0.14	0.17	0.19	0.14	0.00	0.12
185°	-0.10	-0.07	-0.01	0.19	0.32	0.13	0.10	0.14	0.14	0.07	-0.09	0.00
190°	-0.11	-0.07	-0.02	0.16	0.28	0.06	0.00	0.00	-0.04	-0.15	-0.36	-0.34
195°	-0.12	-0.09	-0.05	0.13	0.21	-0.06	-0.16	-0.21	-0.30	-0.48	-0.76	-0.82
200°	-0.14	-0.12	-0.08	0.06	0.12	-0.19	-0.36	-0.46	-0.59	-0.79	-1.11	-1.15
205°	-0.14	-0.14	-0.12	0.02	0.03	-0.33	-0.53	-0.65	-0.76	-0.91	-1.13	-0.97
210°	-0.16	-0.16	-0.17	-0.05	-0.06	-0.44	-0.60	-0.67	-0.67	-0.68	-0.68	-0.31
215°	-0.17	-0.19	-0.21	-0.10	-0.11	-0.47	-0.50	-0.45	-0.29	-0.18	-0.06	0.31
220°	-0.18	-0.21	-0.24	-0.11	-0.12	-0.38	-0.23	-0.07	0.17	0.28	0.32	0.45
225°	-0.21	-0.24	-0.25	-0.11	-0.06	-0.19	0.11	0.31	0.48	0.44	0.28	0.21
230°	-0.21	-0.25	-0.24	-0.05	0.06	0.04	0.38	0.51	0.50	0.29	0.06	0.19
235°	-0.23	-0.26	-0.21	0.03	0.23	0.26	0.49	0.47	0.31	0.13	0.12	0.57
240°	-0.22	-0.24	-0.15	0.14	0.39	0.39	0.42	0.29	0.14	0.23	0.41	0.73
245°	-0.20	-0.21	-0.08	0.25	0.51	0.42	0.27	0.15	0.22	0.46	0.44	0.30
250°	-0.21	-0.19	-0.01	0.36	0.59	0.35	0.16	0.18	0.40	0.47	0.01	-0.28
255°	-0.17	-0.12	0.07	0.44	0.58	0.23	0.16	0.30	0.41	0.09	-0.49	-0.35
260°	-0.16	-0.08	0.15	0.48	0.53	0.13	0.24	0.31	0.15	-0.38	-0.51	-0.18
265°	-0.13	-0.04	0.20	0.48	0.44	0.10	0.25	0.14	-0.25	-0.47	-0.27	-0.23
270°	-0.09	0.02	0.24	0.46	0.34	0.11	0.16	-0.16	-0.45	-0.21	-0.25	-0.35
275°	-0.06	0.06	0.25	0.39	0.28	0.14	-0.05	-0.39	-0.28	-0.07	-0.41	-0.20
280°	-0.06	0.07	0.25	0.35	0.24	0.12	-0.26	-0.39	-0.04	-0.19	-0.40	0.04
285°	-0.04	0.09	0.23	0.28	0.24	0.05	-0.35	-0.21	0.01	-0.31	-0.17	0.05
290°	-0.02	0.11	0.20	0.23	0.23	-0.06	-0.29	-0.04	-0.13	-0.23	-0.03	0.00
295°	0.01	0.13	0.17	0.19	0.22	-0.18	-0.14	-0.01	-0.25	-0.01	-0.08	0.02
300°	0.02	0.13	0.13	0.15	0.22	-0.26	-0.02	-0.09	-0.21	0.10	-0.15	0.07
305°	0.02	0.11	0.09	0.14	0.18	-0.29	0.01	-0.19	-0.04	0.06	-0.11	0.07
310°	0.03	0.10	0.05	0.13	0.11	-0.26	-0.03	-0.22	0.10	-0.05	-0.03	0.01
315°	0.04	0.09	0.02	0.13	0.04	-0.18	-0.10	-0.16	0.14	-0.08	-0.01	-0.01
320°	0.04	0.06	-0.01	0.12	-0.01	-0.10	-0.16	-0.06	0.09	-0.04	-0.04	0.03
325°	0.02	0.03	-0.01	0.11	-0.04	-0.03	-0.17	0.01	0.01	0.04	-0.11	0.09
330°	0.01	0.01	-0.01	0.08	-0.06	0.00	-0.15	0.07	-0.05	0.09	-0.15	0.10
335°	0.02	0.01	0.00	0.05	-0.06	0.02	-0.12	0.07	-0.08	0.10	-0.14	0.08
340°	0.01	0.01	0.00	0.03	-0.04	0.02	-0.08	0.06	-0.07	0.09	-0.11	0.05
345°	0.00	0.00	0.00	0.00	-0.03	0.01	-0.05	0.04	-0.04	0.06	-0.07	0.02
350°	0.01	0.01	0.00	-0.01	-0.02	0.00	-0.03	0.01	-0.02	0.03	-0.04	0.00
355°	0.02	0.02	0.00	-0.02	-0.01	0.00	-0.01	0.00	0.00	0.01	-0.02	-0.02

Tabella A.16 Influenza dello strumento 2250/2270 sulla risposta direzionale, misurata in un piano parallelo al display e lungo l'asse del microfono, 4000 Hz – 10600 Hz

Frequenza												
Angolo	4000 Hz	4500 Hz	5000 Hz	5600 Hz	6300 Hz	7100 Hz	8000 Hz	8500 Hz	9000 Hz	9500 Hz	10000 Hz	10600 Hz
0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00
5°	0.01	0.01	-0.02	0.01	0.01	-0.01	0.00	0.00	-0.01	-0.04	-0.05	0.00
10°	0.02	0.01	-0.05	0.00	0.02	-0.02	0.00	-0.04	-0.05	-0.15	-0.10	-0.01
15°	0.02	-0.02	-0.13	-0.09	0.00	0.03	-0.05	-0.11	-0.10	-0.29	-0.13	0.01
20°	0.01	-0.05	-0.21	-0.23	-0.11	0.14	-0.08	-0.16	-0.01	-0.31	-0.03	0.09
25°	-0.03	-0.08	-0.16	-0.35	-0.30	0.22	-0.03	-0.08	0.15	-0.23	0.14	0.20
30°	-0.07	-0.06	0.05	-0.29	-0.36	0.16	0.13	0.01	0.10	-0.27	0.00	0.05
35°	-0.09	0.01	0.28	-0.16	-0.16	0.15	0.09	0.02	-0.10	-0.18	-0.26	-0.04
40°	-0.04	0.04	0.28	-0.33	-0.10	0.26	-0.13	0.12	0.01	0.14	-0.15	0.13
45°	-0.02	-0.08	0.19	-0.58	-0.36	0.08	-0.13	0.19	0.12	-0.19	-0.16	-0.23
50°	-0.07	-0.14	0.39	-0.26	-0.15	-0.13	-0.05	-0.10	0.27	-0.11	0.19	-0.11
55°	-0.11	-0.02	0.48	-0.01	-0.14	-0.03	0.00	-0.07	0.25	-0.03	-0.27	0.34
60°	-0.05	0.00	0.18	-0.14	-0.46	-0.29	-0.08	-0.06	-0.02	0.29	-0.25	0.12
65°	0.02	-0.12	0.20	0.18	-0.02	0.05	-0.22	-0.04	0.08	-0.13	0.15	0.05
70°	-0.03	-0.02	0.36	-0.11	-0.02	-0.32	-0.29	-0.34	0.14	0.09	-0.28	0.36
75°	-0.13	0.10	0.19	-0.25	0.35	0.14	-0.09	-0.41	-0.31	0.21	-0.24	-0.04
80°	-0.13	-0.01	0.49	-0.13	0.03	0.02	-0.19	-0.12	-0.43	-0.27	0.13	-0.41
85°	-0.16	-0.10	0.53	-0.32	0.04	0.42	0.14	-0.06	-0.02	-0.58	-0.27	-0.01
90°	-0.34	-0.12	0.40	0.24	-0.15	0.11	-0.10	0.28	0.01	-0.15	-0.49	-0.07
95°	-0.53	-0.37	0.39	-0.12	0.22	0.24	-0.07	0.03	0.26	0.07	-0.24	0.07
100°	-0.48	-0.60	0.05	0.09	0.09	0.27	0.13	-0.06	0.16	-0.02	0.17	-0.19
105°	-0.38	-0.59	-0.24	-0.44	0.16	0.37	0.09	0.23	0.12	-0.22	0.18	-0.20
110°	-0.45	-0.48	-0.28	-0.74	-0.29	0.30	0.36	0.48	0.49	0.26	-0.13	0.13
115°	-0.29	-0.45	-0.14	-0.81	-0.76	-0.38	-0.14	0.09	0.55	0.55	0.54	0.70
120°	0.33	-0.12	0.18	-0.73	-0.69	-0.79	-0.95	-0.40	-0.17	-0.22	0.48	0.73
125°	0.74	0.52	0.59	0.00	-0.50	-0.62	-0.95	-1.33	-1.01	-0.94	-0.89	-0.63
130°	0.44	0.74	1.19	0.37	0.58	0.26	-0.84	-0.63	-0.64	-1.17	-1.55	-1.25
135°	-0.04	0.25	1.17	0.85	0.78	1.17	0.79	0.31	0.06	-0.57	-0.57	-0.47
140°	0.10	-0.10	0.47	0.43	0.95	1.19	1.00	1.35	1.58	1.19	0.79	0.39
145°	0.32	0.15	0.37	-0.30	0.23	0.89	0.83	0.86	1.21	1.12	1.22	1.47
150°	-0.07	0.06	0.60	-0.07	-0.13	0.11	0.08	0.31	0.70	0.62	0.84	0.65
155°	-0.89	-0.72	0.06	-0.27	-0.06	0.20	-0.30	-0.33	-0.15	-0.55	-0.19	0.16
160°	-1.39	-1.49	-0.94	-1.30	-0.93	-0.43	-0.45	-0.41	-0.09	-0.50	-0.61	-0.58
165°	-1.18	-1.45	-1.20	-1.96	-1.79	-1.67	-1.81	-1.64	-1.31	-1.50	-1.32	-1.23
170°	-0.64	-0.85	-0.60	-1.41	-1.33	-1.42	-2.06	-2.13	-2.07	-2.51	-2.66	-2.81
175°	-0.19	-0.31	0.07	-0.62	-0.42	-0.32	-0.81	-0.88	-0.72	-1.16	-1.42	-1.58
180°	-0.02	-0.11	0.33	-0.30	-0.03	0.18	-0.19	-0.21	0.06	-0.27	-0.45	-0.48
185°	-0.17	-0.29	0.11	-0.58	-0.37	-0.24	-0.70	-0.80	-0.61	-0.99	-1.23	-1.37
190°	-0.61	-0.82	-0.52	-1.33	-1.27	-1.30	-1.90	-2.04	-1.95	-2.32	-2.49	-2.67
195°	-1.16	-1.43	-1.14	-1.93	-1.80	-1.68	-1.83	-1.70	-1.32	-1.42	-1.26	-1.28
200°	-1.41	-1.53	-0.95	-1.38	-1.04	-0.58	-0.55	-0.44	-0.02	-0.39	-0.59	-0.69
205°	-0.94	-0.81	0.01	-0.36	-0.17	0.08	-0.35	-0.38	-0.12	-0.49	-0.36	-0.04
210°	-0.12	0.00	0.61	-0.13	-0.18	0.04	0.02	0.32	0.67	0.61	0.81	0.52
215°	0.32	0.17	0.42	-0.36	0.15	0.80	0.78	0.82	1.17	1.04	1.12	1.40
220°	0.16	-0.09	0.47	0.35	0.86	1.15	0.95	1.30	1.71	1.40	1.07	0.49
225°	0.01	0.18	1.17	0.79	0.78	1.24	0.89	0.50	0.31	-0.35	-0.58	-0.51
230°	0.43	0.71	1.23	0.35	0.55	0.35	-0.76	-0.71	-0.61	-1.10	-1.61	-1.49
235°	0.74	0.56	0.65	0.00	-0.48	-0.58	-0.96	-1.42	-1.05	-1.06	-1.09	-0.91
240°	0.36	-0.07	0.22	-0.71	-0.86	-0.71	-1.06	-0.56	-0.14	-0.14	0.19	0.48
245°	-0.27	-0.42	-0.09	-0.93	-0.89	-0.38	-0.07	-0.01	0.59	0.54	0.28	0.44
250°	-0.41	-0.48	-0.31	-0.79	-0.47	0.39	0.29	0.40	0.61	0.18	-0.18	0.16
255°	-0.34	-0.62	-0.25	-0.51	0.09	0.39	0.08	0.16	0.28	-0.17	0.29	-0.05
260°	-0.44	-0.68	0.09	0.09	0.02	0.36	0.06	-0.01	0.34	0.10	0.14	-0.23
265°	-0.55	-0.35	0.48	-0.13	0.15	0.27	-0.04	0.13	0.41	0.09	-0.36	0.13
270°	-0.32	-0.08	0.44	0.14	-0.23	0.30	-0.04	0.25	0.10	-0.15	-0.42	-0.04
275°	-0.09	-0.06	0.53	-0.36	0.03	0.56	0.01	-0.09	0.15	-0.53	-0.25	0.02
280°	-0.06	0.00	0.46	-0.15	0.07	0.11	-0.25	-0.05	-0.28	-0.27	0.19	-0.27
285°	-0.09	0.06	0.19	-0.17	0.35	0.11	-0.02	-0.33	-0.26	0.26	-0.09	0.11
290°	-0.02	-0.04	0.42	-0.06	-0.07	-0.24	-0.26	-0.42	0.26	0.22	-0.28	0.45
295°	0.01	-0.11	0.31	0.22	-0.08	0.19	-0.31	-0.07	0.33	-0.10	0.08	0.12
300°	-0.09	0.06	0.31	-0.18	-0.50	-0.17	-0.12	0.11	0.18	0.28	-0.28	0.12
305°	-0.11	0.05	0.52	-0.04	-0.17	0.01	0.04	0.09	0.28	-0.02	-0.34	0.34
310°	-0.05	-0.06	0.40	-0.27	-0.13	-0.15	0.10	-0.13	0.27	0.00	0.01	0.00
315°	0.01	0.00	0.20	-0.61	-0.34	0.06	-0.09	0.13	0.23	-0.16	-0.28	-0.06
320°	0.00	0.08	0.26	-0.33	-0.10	0.34	-0.20	0.10	0.12	0.06	-0.14	0.23
325°	-0.05	0.04	0.25	-0.13	-0.16	0.25	-0.02	0.04	0.01	-0.20	-0.23	-0.02
330°	-0.04	-0.05	0.02	-0.27	-0.36	0.30	0.05	0.07	0.17	-0.26	0.06	-0.01
335°	0.01	-0.09	-0.16	-0.40	-0.30	0.35	-0.05	-0.03	0.16	-0.18	0.16	0.13
340°	0.04	-0.07	-0.19	-0.27	-0.10	0.24	-0.09	-0.13	0.02	-0.24	-0.05	0.07
345°	0.05	-0.03	-0.13	-0.11	0.02	0.10	-0.02	-0.10	-0.06	-0.22	-0.18	0.01
350°	0.04	-0.02	-0.07	-0.02	0.02	0.03	0.03	-0.03	-0.06	-0.11	-0.16	0.01
355°	0.03	-0.02	-0.03	0.01	0.00	0.00	0.02	0.02	-0.03	0.00	-0.10	0.03

Tabella A.17 Influenza dello strumento 2250/2270 sulla risposta direzionale, misurata in un piano parallelo al display e lungo l'asse del microfono, 11200 Hz – 20000 Hz

Frequenza											
Angolo	11200 Hz	11800 Hz	12500 Hz	13200 Hz	14000 Hz	15000 Hz	16000 Hz	17000 Hz	18000 Hz	19000 Hz	20000 Hz
0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5°	0.00	0.00	0.00	0.00	0.03	-0.03	0.01	-0.02	0.01	0.02	-0.01
10°	0.02	-0.01	-0.03	0.00	0.06	-0.07	0.01	-0.07	0.07	0.07	0.05
15°	0.05	0.01	-0.04	0.04	0.02	-0.05	-0.14	-0.06	0.19	0.10	0.09
20°	0.09	-0.03	-0.04	0.16	-0.04	0.05	-0.28	0.03	0.27	0.07	0.01
25°	0.22	-0.09	-0.13	0.08	0.05	0.14	-0.13	-0.10	0.29	0.11	-0.07
30°	0.25	0.01	0.02	-0.08	-0.18	0.48	-0.30	-0.21	0.22	0.08	-0.23
35°	0.13	-0.10	-0.10	-0.11	0.06	0.42	-0.14	-0.52	0.23	0.37	-0.13
40°	0.27	0.33	-0.09	-0.09	-0.17	0.32	0.07	-0.25	0.12	0.24	-0.04
45°	0.01	0.10	-0.26	-0.05	-0.31	0.36	0.19	-0.06	-0.28	0.09	0.17
50°	0.01	0.05	0.16	-0.10	-0.22	0.29	-0.10	0.12	0.02	0.01	0.10
55°	-0.06	0.23	0.14	0.08	-0.13	0.12	-0.02	0.22	0.08	-0.19	0.01
60°	-0.04	-0.02	-0.25	0.13	-0.25	0.32	-0.06	-0.06	0.11	0.38	-0.06
65°	0.23	-0.30	-0.07	-0.43	0.08	0.16	-0.16	0.10	-0.07	0.17	0.31
70°	0.32	-0.06	-0.04	-0.37	-0.25	0.29	0.03	-0.24	0.17	0.23	0.00
75°	0.51	0.06	0.11	-0.24	-0.21	0.05	-0.06	-0.06	0.21	0.00	0.10
80°	0.29	0.30	0.10	-0.10	-0.19	0.35	-0.39	-0.30	0.35	-0.03	-0.04
85°	-0.28	0.36	0.08	0.12	-0.25	0.57	-0.23	-0.11	-0.24	0.52	0.29
90°	-0.25	0.05	0.20	-0.14	0.17	0.28	0.32	-0.14	0.51	-0.11	0.18
95°	-0.24	-0.36	0.18	-0.14	-0.22	0.56	0.11	0.16	-0.02	0.23	0.10
100°	0.41	-0.33	-0.21	-0.22	-0.11	0.23	0.32	-0.13	0.47	0.32	0.11
105°	0.18	-0.01	0.34	-0.43	-0.41	0.30	-0.06	-0.21	0.20	0.18	0.60
110°	0.15	-0.37	0.07	0.11	-0.04	0.35	-0.30	-0.22	0.10	0.05	0.07
115°	0.35	0.26	-0.14	-0.48	-0.24	0.61	-0.25	0.10	0.06	0.08	-0.06
120°	0.80	1.16	0.61	0.38	0.01	0.25	-0.68	0.11	-0.03	0.21	0.24
125°	0.39	0.53	0.29	1.16	1.16	1.48	0.23	0.25	0.08	-0.25	-0.39
130°	-1.01	-1.69	-0.99	-0.08	-0.39	1.00	0.91	1.47	2.00	0.90	1.39
135°	-0.86	-1.37	-0.79	-1.60	-3.02	-1.43	-1.08	-1.13	0.37	0.76	1.55
140°	0.59	0.38	0.23	-0.74	-1.17	0.07	-0.81	-2.52	-2.77	-2.90	-2.99
145°	1.88	1.55	1.31	1.21	1.11	1.58	0.26	-0.10	0.65	0.62	-0.24
150°	0.81	0.91	1.34	1.56	1.53	2.00	1.32	1.37	2.07	1.85	1.35
155°	0.42	0.43	0.30	0.15	0.02	0.75	0.70	0.82	1.27	1.15	1.06
160°	-0.26	-0.32	-0.40	-0.52	-0.61	0.12	-0.01	0.04	-0.01	-0.48	-0.54
165°	-0.83	-0.53	-0.47	-0.42	-0.73	-0.37	-0.90	-1.04	-0.85	-0.99	-0.86
170°	-2.70	-2.62	-2.59	-2.40	-2.27	-1.57	-1.38	-1.12	-0.67	-0.68	-0.84
175°	-1.56	-1.91	-2.29	-2.73	-3.21	-3.12	-3.46	-3.58	-3.54	-3.55	-3.79
180°	-0.33	-0.56	-0.86	-1.12	-1.53	-1.40	-1.78	-1.97	-2.11	-2.40	-2.79
185°	-1.37	-1.72	-2.10	-2.53	-2.94	-2.87	-3.19	-3.49	-3.53	-3.60	-4.06
190°	-2.66	-2.64	-2.74	-2.60	-2.35	-1.75	-1.52	-1.52	-0.98	-0.71	-0.87
195°	-0.99	-0.67	-0.74	-0.51	-0.73	-0.56	-1.06	-1.45	-1.29	-1.39	-1.70
200°	-0.48	-0.58	-0.74	-0.74	-0.93	-0.42	-0.43	-0.27	-0.22	-0.36	-1.03
205°	0.29	0.36	0.10	0.07	-0.16	0.30	0.23	0.37	0.81	1.10	1.07
210°	0.61	0.73	0.90	1.34	1.42	1.74	1.47	1.44	1.97	1.90	1.73
215°	1.75	1.73	1.27	1.28	1.10	1.40	0.78	-0.42	0.04	0.30	-0.09
220°	0.45	0.51	0.17	-0.77	-1.38	-0.52	-0.69	-2.72	-2.78	-2.70	-3.80
225°	-1.06	-1.48	-1.28	-1.66	-2.89	-2.02	-1.14	-1.49	0.11	0.41	0.81
230°	-1.22	-1.80	-1.43	-0.15	-0.33	0.51	1.13	0.71	1.84	1.03	1.61
235°	0.20	0.44	0.14	0.86	0.91	1.17	0.44	0.14	0.51	-0.43	-0.53
240°	0.56	0.87	0.41	0.44	0.14	0.31	-0.64	-0.41	-0.29	-0.12	0.40
245°	0.19	0.25	0.07	-0.20	-0.33	0.29	-0.31	-0.13	0.22	-0.15	-0.17
250°	0.23	-0.20	0.03	0.02	-0.10	0.23	-0.35	-0.39	-0.05	-0.37	0.07
255°	0.21	0.00	0.15	-0.26	-0.42	0.14	-0.24	-0.53	0.36	0.20	0.51
260°	0.28	-0.22	-0.26	-0.24	-0.44	-0.01	0.38	-0.20	0.31	0.20	0.03
265°	-0.29	-0.25	-0.02	-0.10	-0.28	0.56	0.12	-0.25	0.04	0.23	0.25
270°	-0.22	0.07	0.07	-0.01	0.11	0.17	0.44	-0.29	0.50	-0.27	0.23
275°	-0.18	0.39	0.03	0.13	-0.33	0.39	-0.11	-0.35	-0.11	0.37	0.37
280°	0.38	0.26	-0.08	-0.01	-0.34	0.46	-0.59	-0.35	0.29	-0.10	-0.09
285°	0.49	-0.03	0.01	-0.22	-0.16	-0.05	-0.05	-0.27	0.29	-0.16	0.25
290°	0.25	-0.07	-0.15	-0.17	-0.40	0.36	0.01	-0.31	0.21	0.21	-0.05
295°	0.14	-0.29	0.00	-0.37	0.00	0.21	-0.05	-0.17	0.03	0.22	0.49
300°	-0.10	0.08	-0.18	0.07	-0.17	0.32	-0.18	-0.03	0.15	0.42	-0.05
305°	0.04	0.28	0.00	0.31	-0.24	0.24	-0.10	0.19	0.14	-0.09	0.11
310°	0.08	-0.12	0.13	0.01	-0.20	0.35	-0.22	0.10	0.14	-0.04	0.12
315°	-0.03	0.00	-0.13	-0.04	-0.21	0.46	0.03	-0.07	-0.26	0.19	0.29
320°	0.08	0.42	-0.11	0.04	-0.19	0.40	0.06	-0.25	0.10	0.18	0.04
325°	0.01	0.03	-0.24	0.02	0.00	0.49	-0.14	-0.56	0.34	0.38	-0.02
330°	0.23	0.04	0.01	-0.02	-0.13	0.49	-0.25	-0.29	0.23	0.10	-0.12
335°	0.30	-0.13	-0.09	0.05	0.09	0.18	-0.13	-0.08	0.22	0.08	0.00
340°	0.17	-0.09	0.05	0.17	0.02	0.10	-0.27	0.07	0.27	0.04	0.06
345°	0.13	-0.04	0.00	0.06	0.02	0.03	-0.15	-0.02	0.22	0.09	0.13
350°	0.07	-0.05	-0.04	0.02	0.05	-0.03	0.00	-0.08	0.11	0.06	0.08
355°	0.03	-0.04	-0.01	0.00	0.00	0.03	0.00	-0.03	0.04	0.01	0.00

Tabella A.18 Influenza dello strumento 2250/2270 sulla risposta direzionale, misurata in un piano perpendicolare al display e lungo l'asse del microfono, 500 Hz – 3550 Hz

Angolo	Frequenza											
	500 Hz	630 Hz	800 Hz	1000 Hz	1250 Hz	1600 Hz	2000 Hz	2240 Hz	2500 Hz	2800 Hz	3150 Hz	3550 Hz
0°	-0.01	-0.01	-0.01	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
5°	0.01	0.01	-0.01	0.02	0.00	0.00	-0.01	-0.01	0.00	0.00	0.00	-0.02
10°	0.00	0.00	0.00	0.02	-0.01	0.00	-0.03	0.00	-0.02	0.01	0.00	-0.04
15°	0.00	-0.01	0.00	0.03	-0.02	0.01	-0.04	0.02	-0.04	0.02	-0.03	-0.04
20°	0.01	0.00	0.00	0.03	-0.04	0.01	-0.07	0.03	-0.07	0.04	-0.07	-0.02
25°	0.00	-0.01	0.00	0.06	-0.05	0.00	-0.10	0.04	-0.09	0.06	-0.12	0.03
30°	-0.01	-0.01	-0.01	0.08	-0.05	-0.01	-0.14	0.04	-0.10	0.07	-0.18	0.11
35°	-0.02	-0.01	-0.01	0.09	-0.04	-0.05	-0.17	0.02	-0.07	0.04	-0.21	0.18
40°	0.01	0.03	0.00	0.10	-0.01	-0.11	-0.18	-0.04	-0.01	-0.02	-0.18	0.19
45°	0.01	0.04	0.02	0.10	0.03	-0.21	-0.14	-0.12	0.04	-0.08	-0.13	0.09
50°	0.02	0.08	0.05	0.09	0.08	-0.30	-0.09	-0.18	0.03	-0.07	-0.13	-0.04
55°	0.00	0.08	0.10	0.11	0.12	-0.35	-0.05	-0.17	-0.08	0.01	-0.21	-0.06
60°	-0.01	0.09	0.15	0.11	0.14	-0.35	-0.08	-0.10	-0.23	0.09	-0.26	0.01
65°	-0.04	0.08	0.19	0.15	0.14	-0.28	-0.18	-0.03	-0.28	0.03	-0.16	-0.03
70°	-0.04	0.07	0.24	0.21	0.13	-0.17	-0.33	-0.06	-0.17	-0.17	-0.04	-0.14
75°	-0.06	0.05	0.27	0.27	0.12	-0.07	-0.44	-0.22	-0.05	-0.27	-0.09	-0.05
80°	-0.08	0.03	0.28	0.36	0.14	-0.01	-0.41	-0.42	-0.10	-0.16	-0.32	0.09
85°	-0.10	0.00	0.28	0.44	0.19	0.00	-0.26	-0.50	-0.35	-0.07	-0.35	-0.04
90°	-0.13	-0.04	0.25	0.51	0.30	-0.03	-0.07	-0.35	-0.56	-0.26	-0.19	-0.25
95°	-0.17	-0.09	0.19	0.54	0.44	-0.03	0.02	-0.10	-0.45	-0.57	-0.28	-0.12
100°	-0.20	-0.15	0.12	0.53	0.57	0.05	0.01	0.05	-0.11	-0.52	-0.69	-0.06
105°	-0.21	-0.19	0.03	0.46	0.64	0.19	-0.01	0.03	0.11	-0.10	-0.75	-0.50
110°	-0.23	-0.22	-0.06	0.37	0.64	0.37	0.07	0.00	0.06	0.19	-0.22	-0.62
115°	-0.23	-0.25	-0.14	0.23	0.56	0.47	0.28	0.12	-0.04	0.10	0.18	0.00
120°	-0.25	-0.28	-0.20	0.07	0.40	0.44	0.49	0.40	0.12	-0.04	0.06	0.39
125°	-0.24	-0.29	-0.26	-0.06	0.21	0.28	0.56	0.63	0.49	0.20	-0.09	0.20
130°	-0.24	-0.29	-0.28	-0.16	0.01	0.01	0.42	0.65	0.75	0.65	0.22	0.16
135°	-0.23	-0.28	-0.28	-0.22	-0.13	-0.29	0.07	0.37	0.66	0.83	0.70	0.66
140°	-0.23	-0.27	-0.26	-0.21	-0.21	-0.53	-0.36	-0.12	0.19	0.52	0.72	1.03
145°	-0.23	-0.25	-0.23	-0.19	-0.20	-0.64	-0.70	-0.62	-0.45	-0.19	0.12	0.70
150°	-0.20	-0.22	-0.18	-0.13	-0.14	-0.61	-0.84	-0.90	-0.94	-0.90	-0.79	-0.26
155°	-0.18	-0.18	-0.13	-0.06	-0.04	-0.48	-0.77	-0.88	-1.05	-1.21	-1.44	-1.22
160°	-0.18	-0.17	-0.08	0.03	0.06	-0.32	-0.57	-0.66	-0.83	-1.03	-1.44	-1.46
165°	-0.15	-0.14	-0.04	0.08	0.15	-0.15	-0.35	-0.38	-0.50	-0.63	-1.00	-1.04
170°	-0.15	-0.12	-0.01	0.12	0.23	-0.03	-0.16	-0.14	-0.18	-0.24	-0.53	-0.45
175°	-0.14	-0.12	0.00	0.17	0.27	0.04	-0.03	0.02	0.01	0.02	-0.19	-0.05
180°	-0.16	-0.13	0.01	0.17	0.29	0.06	0.01	0.08	0.09	0.11	-0.07	0.12
185°	-0.15	-0.12	0.00	0.18	0.28	0.04	-0.02	0.04	0.05	0.05	-0.14	0.02
190°	-0.15	-0.13	-0.02	0.15	0.24	-0.04	-0.13	-0.09	-0.13	-0.18	-0.42	-0.32
195°	-0.15	-0.14	-0.04	0.11	0.17	-0.16	-0.30	-0.31	-0.42	-0.54	-0.87	-0.87
200°	-0.18	-0.17	-0.08	0.03	0.08	-0.32	-0.51	-0.58	-0.77	-0.94	-1.34	-1.37
205°	-0.18	-0.19	-0.12	-0.02	-0.01	-0.49	-0.71	-0.82	-1.03	-1.18	-1.48	-1.32
210°	-0.21	-0.23	-0.17	-0.10	-0.11	-0.63	-0.81	-0.88	-1.01	-0.99	-0.98	-0.51
215°	-0.22	-0.25	-0.21	-0.16	-0.18	-0.68	-0.72	-0.68	-0.61	-0.36	-0.10	0.47
220°	-0.24	-0.28	-0.25	-0.19	-0.20	-0.60	-0.43	-0.26	0.00	0.33	0.56	0.92
225°	-0.25	-0.30	-0.27	-0.19	-0.16	-0.39	-0.04	0.22	0.49	0.70	0.66	0.69
230°	-0.26	-0.30	-0.27	-0.15	-0.04	-0.10	0.30	0.52	0.66	0.61	0.28	0.21
235°	-0.27	-0.31	-0.24	-0.07	0.13	0.18	0.48	0.56	0.48	0.26	-0.07	0.20
240°	-0.26	-0.28	-0.19	0.06	0.31	0.36	0.44	0.38	0.18	0.03	0.05	0.45
245°	-0.26	-0.27	-0.13	0.20	0.45	0.41	0.27	0.16	0.03	0.13	0.20	0.17
250°	-0.24	-0.23	-0.06	0.33	0.53	0.34	0.10	0.08	0.10	0.22	-0.12	-0.53
255°	-0.23	-0.19	0.03	0.43	0.55	0.20	0.05	0.13	0.12	-0.05	-0.70	-0.60
260°	-0.19	-0.13	0.11	0.47	0.49	0.07	0.09	0.12	-0.08	-0.51	-0.76	-0.13
265°	-0.17	-0.08	0.18	0.49	0.40	0.02	0.08	-0.03	-0.44	-0.63	-0.35	-0.06
270°	-0.14	-0.04	0.23	0.46	0.29	0.04	-0.02	-0.31	-0.61	-0.32	-0.19	-0.24
275°	-0.11	0.00	0.25	0.38	0.22	0.07	-0.22	-0.51	-0.42	-0.07	-0.35	-0.09
280°	-0.09	0.03	0.26	0.32	0.18	0.06	-0.39	-0.48	-0.14	-0.14	-0.36	0.13
285°	-0.07	0.04	0.25	0.24	0.18	-0.01	-0.44	-0.29	-0.05	-0.25	-0.14	0.02
290°	-0.04	0.08	0.22	0.17	0.19	-0.13	-0.36	-0.10	-0.17	-0.17	-0.03	-0.11
295°	-0.03	0.08	0.18	0.13	0.20	-0.25	-0.21	-0.05	-0.27	0.03	-0.15	0.03
300°	-0.01	0.09	0.13	0.10	0.19	-0.32	-0.09	-0.12	-0.20	0.10	-0.25	0.16
305°	0.01	0.08	0.09	0.09	0.16	-0.33	-0.06	-0.19	-0.03	0.01	-0.16	0.11
310°	0.01	0.07	0.05	0.10	0.11	-0.28	-0.10	-0.20	0.09	-0.12	-0.01	0.00
315°	0.01	0.05	0.01	0.11	0.04	-0.20	-0.16	-0.12	0.10	-0.12	0.03	-0.02
320°	0.02	0.04	-0.01	0.10	-0.02	-0.11	-0.20	-0.02	0.03	-0.03	-0.02	0.01
325°	0.01	0.01	-0.01	0.11	-0.05	-0.03	-0.19	0.04	-0.05	0.07	-0.10	0.05
330°	0.01	0.00	-0.01	0.08	-0.07	0.00	-0.16	0.08	-0.09	0.12	-0.13	0.03
335°	0.00	0.00	0.00	0.04	-0.06	0.02	-0.12	0.08	-0.10	0.13	-0.14	0.02
340°	0.00	-0.01	0.00	0.03	-0.05	0.02	-0.07	0.06	-0.08	0.11	-0.10	0.01
345°	-0.01	-0.01	0.00	0.00	-0.03	0.02	-0.04	0.04	-0.04	0.08	-0.07	0.01
350°	0.00	0.00	0.01	-0.01	-0.02	0.01	-0.02	0.02	-0.02	0.06	-0.03	0.01
355°	0.00	0.00	0.00	-0.01	0.00	0.00	-0.01	0.00	0.01	0.03	-0.02	0.00

Tabella A.19 Influenza dello strumento 2250/2270 sulla risposta direzionale, misurata in un piano perpendicolare al display e lungo l'asse del microfono, 4000 Hz – 10600 Hz

Angolo	Frequenza											
	4000 Hz	4500 Hz	5000 Hz	5600 Hz	6300 Hz	7100 Hz	8000 Hz	8500 Hz	9000 Hz	9500 Hz	10000 Hz	10600 Hz
0°	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
5°	0.02	0.00	-0.02	-0.03	-0.04	0.00	-0.02	-0.03	0.04	-0.01	-0.01	0.05
10°	0.03	0.02	-0.01	-0.06	-0.09	0.05	-0.04	-0.03	0.15	-0.05	0.02	0.11
15°	0.06	0.02	-0.01	-0.13	-0.17	0.12	-0.04	0.01	0.26	-0.19	0.05	0.13
20°	0.08	0.03	0.02	-0.14	-0.25	0.14	0.09	0.08	0.25	-0.39	0.06	0.05
25°	0.06	0.03	0.11	-0.08	-0.21	0.08	0.26	0.00	-0.01	-0.44	0.10	-0.06
30°	0.03	0.04	0.22	0.01	-0.02	0.09	0.19	-0.15	-0.12	-0.06	0.04	0.08
35°	-0.04	0.08	0.27	-0.07	0.04	0.29	-0.13	0.15	0.02	0.01	-0.45	0.13
40°	-0.06	0.11	0.24	-0.33	-0.23	0.24	0.02	0.30	-0.23	-0.26	-0.19	0.23
45°	-0.01	0.10	0.27	-0.33	-0.25	-0.04	0.02	-0.08	0.12	-0.19	0.09	-0.18
50°	0.13	0.02	0.39	-0.02	-0.01	0.17	0.00	0.08	0.14	-0.35	-0.08	0.14
55°	0.19	-0.07	0.42	-0.07	-0.37	-0.09	0.30	-0.16	0.01	0.11	-0.36	0.26
60°	0.08	0.02	0.32	-0.09	-0.33	-0.11	0.00	0.19	-0.01	-0.28	0.02	0.28
65°	-0.04	0.18	0.31	0.16	0.01	0.08	0.21	-0.15	0.04	0.02	-0.33	0.26
70°	0.02	0.08	0.33	-0.06	-0.14	-0.26	-0.21	0.05	-0.17	-0.05	-0.12	0.06
75°	-0.03	-0.05	0.48	-0.12	0.32	0.19	0.15	-0.40	0.01	-0.27	-0.11	0.18
80°	-0.16	0.02	0.48	-0.05	0.07	-0.09	0.00	-0.07	-0.56	0.02	-0.38	0.05
85°	-0.03	-0.10	0.36	-0.07	0.05	0.41	0.11	0.20	-0.33	-0.55	0.01	-0.28
90°	0.01	-0.18	0.40	-0.04	0.03	0.24	0.10	0.03	0.26	-0.61	-0.38	0.10
95°	-0.26	-0.04	0.19	-0.09	-0.10	0.32	-0.03	0.24	-0.09	0.00	-0.23	-0.04
100°	-0.25	-0.29	0.29	-0.12	0.00	0.24	0.33	0.06	0.12	0.00	-0.03	0.29
105°	-0.10	-0.37	0.12	-0.25	-0.10	0.13	0.00	0.30	0.29	-0.12	0.09	0.21
110°	-0.52	-0.24	-0.13	-0.35	-0.11	0.27	0.03	-0.13	0.02	-0.04	0.31	0.12
115°	-0.64	-0.69	0.03	-0.64	-0.37	-0.02	0.02	0.19	-0.05	-0.36	-0.13	0.44
120°	0.15	-0.64	-0.34	-0.57	-0.60	-0.17	-0.30	-0.29	-0.05	0.00	-0.18	-0.01
125°	0.45	0.25	0.00	-0.93	-0.57	-0.37	-0.49	-0.47	-0.45	-0.75	-0.25	0.11
130°	0.12	0.32	0.85	-0.10	-0.69	-0.21	-0.65	-0.79	-0.94	-1.03	-0.89	-0.28
135°	0.27	0.01	0.66	0.44	0.48	0.13	-0.35	-0.47	-0.54	-1.19	-1.46	-0.96
140°	0.92	0.53	0.57	-0.06	0.28	1.03	0.49	0.21	0.00	-0.34	-0.45	-0.66
145°	1.04	1.02	1.25	0.41	0.14	0.36	0.55	0.56	0.77	0.62	0.80	0.73
150°	0.23	0.55	1.27	0.96	1.05	1.03	0.41	0.21	0.10	-0.15	0.37	0.79
155°	-1.04	-0.79	0.07	0.09	0.70	1.40	1.22	1.12	1.11	0.53	0.45	0.54
160°	-1.72	-1.93	-1.43	-1.81	-1.27	-0.34	0.14	0.35	0.81	0.61	0.73	1.05
165°	-1.37	-1.78	-1.64	-2.60	-2.70	-2.65	-2.67	-2.59	-2.24	-2.30	-2.02	-1.68
170°	-0.66	-0.98	-0.77	-1.68	-1.76	-1.99	-2.66	-3.01	-3.24	-3.81	-4.18	-4.79
175°	-0.12	-0.33	0.02	-0.70	-0.57	-0.45	-0.82	-1.01	-1.01	-1.41	-1.61	-1.77
180°	0.08	-0.07	0.33	-0.30	-0.09	0.17	-0.04	-0.15	-0.02	-0.30	-0.40	-0.33
185°	-0.04	-0.23	0.14	-0.55	-0.39	-0.22	-0.54	-0.73	-0.68	-1.02	-1.21	-1.20
190°	-0.50	-0.78	-0.54	-1.39	-1.44	-1.58	-2.22	-2.59	-2.78	-3.33	-3.62	-3.92
195°	-1.17	-1.56	-1.43	-2.40	-2.58	-2.81	-3.12	-3.22	-2.94	-3.07	-2.67	-2.51
200°	-1.66	-1.94	-1.54	-2.08	-1.83	-1.04	-0.45	-0.18	0.38	0.33	0.55	0.76
205°	-1.25	-1.12	-0.24	-0.34	0.15	1.09	1.13	1.12	1.22	0.78	0.66	0.66
210°	-0.07	0.24	1.09	0.71	0.86	1.17	0.51	0.26	0.08	-0.21	0.16	0.33
215°	0.85	0.89	1.27	0.37	0.27	0.20	0.35	0.56	1.03	1.01	1.07	1.18
220°	0.92	0.56	0.64	-0.15	0.14	1.04	1.11	0.97	0.58	-0.25	-0.44	-0.58
225°	0.36	0.03	0.59	0.38	0.60	0.81	-0.35	-0.79	-0.65	-0.97	-1.17	-1.07
230°	0.14	0.32	0.98	0.09	-0.38	-0.62	-0.56	-0.67	-0.98	-1.33	-1.17	-0.58
235°	0.50	0.44	0.27	-0.96	-0.96	-0.20	-0.71	-0.85	-0.42	-0.73	-0.78	-0.33
240°	0.34	-0.42	-0.50	-0.77	-0.66	-0.52	-0.11	-0.21	-0.33	-0.29	-0.65	-0.41
245°	-0.49	-0.86	0.01	-0.79	-0.68	0.22	-0.16	-0.18	-0.14	-0.43	-0.03	0.04
250°	-0.64	-0.30	-0.08	-0.60	-0.23	0.05	0.00	-0.04	0.37	-0.33	-0.44	0.20
255°	-0.14	-0.34	-0.10	-0.27	-0.36	0.22	0.14	0.09	-0.16	-0.07	0.09	0.39
260°	-0.14	-0.47	0.37	-0.29	-0.23	0.27	0.00	0.07	0.20	0.07	-0.06	-0.18
265°	-0.31	-0.03	0.16	-0.23	-0.12	0.09	0.19	0.18	0.22	-0.39	-0.43	0.08
270°	-0.02	-0.14	0.29	-0.08	-0.38	0.49	0.15	-0.01	0.00	-0.54	-0.31	-0.33
275°	0.08	-0.25	0.48	-0.28	0.01	0.47	-0.08	0.04	-0.16	-0.61	-0.60	0.23
280°	-0.15	0.06	0.38	-0.33	0.11	0.11	0.02	0.00	-0.61	-0.38	-0.14	0.03
285°	-0.05	0.08	0.25	0.01	0.19	0.06	0.21	-0.55	-0.13	-0.35	-0.12	0.05
290°	0.11	-0.03	0.29	-0.07	-0.15	-0.03	-0.36	-0.18	-0.27	-0.02	-0.36	0.05
295°	0.08	-0.03	0.45	0.05	-0.14	0.12	0.05	-0.34	0.19	-0.20	-0.44	0.30
300°	-0.01	0.01	0.38	-0.10	-0.31	-0.09	-0.18	0.19	-0.11	-0.15	-0.18	0.23
305°	0.01	0.12	0.36	-0.21	-0.30	0.06	0.20	-0.15	0.05	-0.14	-0.45	0.09
310°	0.04	0.17	0.37	-0.14	-0.21	0.11	0.10	0.00	-0.04	-0.26	-0.15	0.15
315°	0.07	0.10	0.33	-0.31	-0.29	-0.15	-0.06	-0.22	0.25	-0.29	-0.25	-0.07
320°	0.14	0.04	0.22	-0.34	-0.17	0.34	-0.08	0.11	-0.11	-0.20	-0.35	0.22
325°	0.18	0.03	0.19	-0.21	-0.08	0.41	-0.24	0.16	0.03	-0.22	-0.30	0.07
330°	0.18	0.07	0.16	-0.11	-0.24	0.16	0.05	-0.13	0.06	-0.25	-0.01	0.08
335°	0.13	0.09	0.12	-0.07	-0.31	0.15	0.20	-0.03	-0.01	-0.32	-0.05	-0.14
340°	0.08	0.08	0.07	-0.03	-0.22	0.20	0.10	0.11	0.00	-0.17	-0.05	0.06
345°	0.05	0.07	0.03	0.02	-0.10	0.15	-0.01	0.13	0.02	-0.06	-0.04	0.18
350°	0.03	0.02	0.00	0.04	-0.02	0.07	-0.02	0.11	0.00	0.00	-0.07	0.11
355°	0.02	0.00	-0.01	0.04	0.01	0.02	0.01	0.07	-0.01	0.04	-0.08	0.05

Tabella A.20 Influenza dello strumento 2250/2270 sulla risposta direzionale, misurata in un piano perpendicolare al display e lungo l'asse del microfono, 11200 Hz – 20000 Hz

Angolo	Frequenza										
	11200 Hz	11800 Hz	12500 Hz	13200 Hz	14000 Hz	15000 Hz	16000 Hz	17000 Hz	18000 Hz	19000 Hz	20000 Hz
0°	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	-0.02	-0.02	-0.03
5°	0.01	0.00	0.04	0.00	0.02	-0.06	0.00	-0.03	-0.01	0.05	-0.01
10°	0.05	0.02	0.03	0.03	0.07	-0.13	0.02	-0.05	0.09	0.14	0.06
15°	0.08	0.05	0.02	0.08	0.10	-0.09	-0.15	0.03	0.22	0.10	0.05
20°	0.08	0.01	0.01	0.14	-0.03	0.03	-0.30	0.17	0.21	0.04	0.00
25°	0.11	-0.21	-0.11	0.15	-0.05	-0.03	-0.12	-0.03	0.29	0.04	-0.12
30°	0.28	-0.18	-0.02	-0.03	-0.13	0.42	-0.43	-0.09	0.21	0.02	-0.17
35°	0.03	-0.10	-0.03	-0.09	0.01	0.23	-0.23	-0.47	0.35	0.20	-0.11
40°	0.06	0.14	-0.33	-0.10	-0.12	0.26	-0.05	-0.32	0.27	0.19	-0.03
45°	0.03	-0.05	-0.21	0.12	-0.17	0.30	-0.04	-0.11	-0.16	0.09	0.21
50°	0.04	-0.01	0.15	-0.11	-0.16	0.13	-0.24	0.14	0.04	0.00	0.16
55°	-0.31	-0.17	-0.31	-0.14	-0.22	0.09	-0.11	0.22	0.05	-0.32	0.01
60°	0.11	-0.24	-0.37	-0.13	-0.20	0.26	-0.14	-0.07	0.09	0.21	-0.10
65°	0.31	-0.15	-0.10	-0.41	0.09	0.25	-0.33	0.04	-0.03	0.10	0.21
70°	0.28	-0.07	0.00	-0.38	-0.08	0.30	-0.03	-0.39	0.20	0.24	0.02
75°	0.10	-0.03	0.08	-0.18	-0.20	0.09	-0.19	-0.11	0.08	-0.05	0.01
80°	0.37	-0.26	0.13	-0.02	-0.16	0.09	-0.61	-0.30	0.31	-0.17	0.12
85°	0.20	0.16	-0.30	0.25	-0.18	0.14	-0.90	-0.45	-0.14	0.51	0.42
90°	-0.13	-0.05	-0.05	-0.15	0.07	-0.10	-0.51	-0.44	0.38	-0.24	-0.09
95°	-0.08	-0.25	-0.45	-0.13	-0.19	0.20	-0.35	0.27	0.21	-0.17	-0.75
100°	-0.10	-0.29	-0.65	-0.33	-0.37	0.24	0.36	-0.01	0.16	-0.26	-0.42
105°	0.04	0.04	-0.37	-0.57	-0.46	0.28	-0.33	-0.29	0.16	-0.07	0.26
110°	0.14	-0.10	-0.13	0.05	-0.44	-0.01	-0.79	-0.40	0.13	0.15	0.17
115°	0.59	0.07	-0.14	0.07	-0.13	0.36	-0.99	-0.11	-0.01	0.04	-0.78
120°	0.29	0.30	0.49	0.50	-0.26	0.18	-0.71	0.51	0.22	-0.32	-1.16
125°	0.20	-0.13	-0.12	0.28	0.04	0.82	-0.46	0.18	0.42	-0.50	-0.16
130°	-0.17	-0.57	-0.29	-0.22	-0.66	0.41	-0.49	0.27	1.23	-0.47	0.83
135°	-0.59	-0.69	-0.41	-1.05	-1.19	-0.08	-0.75	-0.88	0.53	-0.19	0.00
140°	-0.54	-1.11	-1.22	-1.43	-0.90	0.06	-1.10	-1.76	-0.36	-0.80	-1.90
145°	0.45	-0.26	-0.50	-0.31	-0.52	-0.56	-2.34	-1.62	0.11	-0.44	-1.47
150°	1.11	0.98	1.14	0.99	0.29	-0.03	-0.74	0.05	0.81	-0.69	-1.89
155°	0.35	0.08	0.08	0.50	0.76	1.43	1.11	1.35	1.12	-0.32	-0.23
160°	1.30	1.09	1.09	0.93	0.24	0.04	-0.28	0.45	0.94	0.27	1.30
165°	-0.99	-0.52	0.02	0.56	0.45	0.68	0.43	1.00	0.98	-0.19	0.19
170°	-5.21	-5.41	-5.60	-5.24	-5.04	-4.40	-3.86	-2.70	-1.94	-2.30	-1.35
175°	-2.07	-2.52	-2.91	-3.44	-4.22	-4.88	-5.33	-5.62	-6.07	-7.44	-7.64
180°	-0.39	-0.64	-0.79	-1.02	-1.49	-1.76	-1.99	-1.81	-1.97	-2.95	-2.45
185°	-1.40	-1.77	-2.09	-2.51	-3.07	-3.57	-3.94	-4.09	-4.36	-5.63	-5.61
190°	-4.51	-5.07	-5.77	-5.95	-6.35	-6.27	-5.99	-5.14	-4.33	-4.33	-3.38
195°	-2.04	-1.64	-1.15	-0.38	-0.27	-0.06	-0.21	0.37	0.72	-0.49	-0.43
200°	0.99	0.90	0.86	0.92	0.42	-0.11	-0.84	-0.45	-0.37	-0.01	-0.57
205°	0.37	-0.13	-0.70	-0.38	-0.15	0.51	0.41	1.17	1.55	0.25	-0.15
210°	0.75	0.83	0.96	1.32	1.03	0.49	-0.37	0.04	1.28	0.54	-0.56
215°	0.89	0.23	-0.55	-0.30	-0.19	-0.13	-1.58	-3.02	-1.16	-0.29	-1.22
220°	-0.51	-0.69	-1.37	-2.14	-1.77	-0.42	-0.82	-3.30	-1.37	-0.08	-2.45
225°	-1.12	-0.99	-1.08	-1.47	-1.80	-0.42	0.00	-1.59	-0.64	-0.01	-0.74
230°	-0.41	-1.03	-0.75	-0.04	-1.09	-0.60	0.50	-0.47	0.65	-0.05	-0.39
235°	0.13	-0.57	-0.75	0.37	0.00	-0.14	-0.21	-0.95	0.91	-0.38	-0.64
240°	0.19	0.29	-0.39	0.16	-0.30	-0.01	-0.44	-0.87	0.23	-0.88	-1.00
245°	-0.28	0.05	-0.33	0.34	-0.13	0.09	-1.22	-0.91	0.31	-0.31	-1.09
250°	0.04	0.18	-0.31	-0.12	-0.64	0.32	-0.86	-1.33	-0.25	-0.37	-0.51
255°	-0.14	-0.15	-0.58	-0.29	-0.70	-0.03	-0.52	-1.04	-0.31	0.05	-0.60
260°	0.00	-0.15	-0.71	-0.87	-0.68	-0.01	-0.25	-0.52	-0.44	-0.31	-0.86
265°	0.04	-0.72	-0.34	-0.62	-0.87	0.26	-0.46	-0.52	0.01	0.03	-0.94
270°	0.13	-0.27	-0.28	-0.49	-0.20	-0.48	-0.27	-1.01	0.17	-0.52	-0.13
275°	-0.02	-0.13	-0.30	-0.22	-0.44	-0.11	-0.85	-1.14	-0.65	-0.15	-0.14
280°	0.14	-0.14	-0.47	-0.12	-0.61	0.06	-1.21	-0.67	0.01	-0.30	-0.11
285°	0.12	-0.32	-0.17	-0.48	-0.41	-0.46	-0.31	-0.52	0.06	-0.27	-0.29
290°	0.14	-0.20	-0.37	-0.50	-0.65	0.04	-0.34	-0.59	-0.02	-0.12	-0.57
295°	0.13	-0.34	-0.37	-0.77	-0.26	0.09	-0.43	-0.53	-0.37	-0.15	0.03
300°	-0.16	-0.44	-0.71	-0.40	-0.24	0.14	-0.59	-0.39	-0.15	-0.01	-0.56
305°	-0.31	-0.30	-0.48	0.11	-0.29	0.08	-0.37	-0.20	-0.20	-0.38	-0.27
310°	0.04	-0.18	-0.01	-0.06	-0.25	0.07	-0.67	-0.14	0.00	-0.17	-0.11
315°	-0.19	-0.43	-0.36	-0.19	-0.38	0.04	-0.35	-0.28	-0.25	-0.06	-0.05
320°	-0.20	0.23	-0.28	-0.03	-0.33	0.15	-0.24	-0.57	-0.01	-0.05	-0.23
325°	-0.22	-0.15	-0.33	-0.03	-0.25	0.11	-0.33	-0.56	0.22	0.14	-0.22
330°	0.28	-0.05	-0.02	-0.12	-0.24	0.24	-0.58	-0.40	0.01	-0.18	-0.24
335°	0.06	-0.41	-0.14	-0.08	-0.12	0.02	-0.16	-0.13	0.15	-0.09	-0.22
340°	0.20	-0.13	0.12	0.16	-0.13	-0.05	-0.40	0.07	0.16	-0.06	-0.05
345°	0.28	0.01	0.03	0.08	-0.01	-0.07	-0.26	-0.02	0.11	-0.05	0.00
350°	0.16	-0.04	-0.09	0.01	0.07	-0.04	0.02	-0.14	0.15	0.05	0.09
355°	0.05	-0.05	-0.04	-0.01	0.03	0.04	0.04	-0.05	0.08	0.04	0.03

Tabella A.21 Risposta direzionale per microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurato in un piano parallelo al display e lungo l'asse del microfono, 500 Hz – 3550 Hz

Angolo	Frequenza											
	500 Hz	630 Hz	800 Hz	1000 Hz	1250 Hz	1600 Hz	2000 Hz	2240 Hz	2500 Hz	2800 Hz	3150 Hz	3550 Hz
0°	-0.01	-0.01	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5°	0.00	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.00	-0.01	0.00	-0.01	-0.01
10°	0.01	0.00	-0.01	0.01	-0.02	0.00	-0.02	0.00	-0.03	0.00	-0.04	-0.01
15°	0.02	0.00	-0.01	0.03	-0.04	-0.01	-0.05	0.01	-0.06	0.01	-0.08	-0.02
20°	0.02	0.01	-0.01	0.03	-0.05	-0.01	-0.09	0.02	-0.11	0.00	-0.15	-0.03
25°	0.02	0.01	-0.01	0.04	-0.08	-0.03	-0.14	0.02	-0.14	-0.02	-0.22	-0.05
30°	0.03	0.03	-0.02	0.07	-0.09	-0.06	-0.18	0.00	-0.15	-0.06	-0.28	-0.08
35°	0.02	0.03	-0.02	0.08	-0.08	-0.12	-0.21	-0.06	-0.13	-0.15	-0.31	-0.14
40°	0.04	0.05	-0.02	0.09	-0.06	-0.20	-0.22	-0.15	-0.08	-0.26	-0.32	-0.24
45°	0.04	0.08	-0.01	0.08	-0.03	-0.31	-0.19	-0.25	-0.06	-0.35	-0.36	-0.33
50°	0.03	0.08	0.01	0.08	0.02	-0.41	-0.15	-0.32	-0.11	-0.38	-0.44	-0.39
55°	0.01	0.08	0.05	0.07	0.06	-0.47	-0.14	-0.32	-0.27	-0.33	-0.57	-0.45
60°	0.00	0.09	0.08	0.07	0.09	-0.47	-0.21	-0.25	-0.44	-0.31	-0.68	-0.53
65°	-0.04	0.07	0.11	0.08	0.09	-0.41	-0.37	-0.20	-0.51	-0.43	-0.70	-0.65
70°	-0.05	0.05	0.14	0.12	0.07	-0.31	-0.57	-0.26	-0.42	-0.66	-0.69	-0.74
75°	-0.08	0.02	0.15	0.17	0.05	-0.22	-0.69	-0.47	-0.32	-0.78	-0.84	-0.79
80°	-0.09	0.00	0.16	0.22	0.03	-0.16	-0.66	-0.71	-0.39	-0.68	-1.08	-0.87
85°	-0.11	-0.03	0.15	0.27	0.05	-0.16	-0.48	-0.79	-0.66	-0.61	-1.13	-1.11
90°	-0.16	-0.09	0.12	0.32	0.10	-0.20	-0.29	-0.62	-0.89	-0.78	-0.99	-1.32
95°	-0.18	-0.13	0.08	0.34	0.18	-0.25	-0.19	-0.35	-0.79	-1.08	-1.04	-1.24
100°	-0.22	-0.19	0.01	0.32	0.26	-0.25	-0.22	-0.18	-0.42	-1.07	-1.33	-1.19
105°	-0.25	-0.24	-0.06	0.28	0.32	-0.18	-0.31	-0.21	-0.15	-0.65	-1.38	-1.39
110°	-0.26	-0.28	-0.15	0.19	0.32	-0.09	-0.35	-0.35	-0.18	-0.28	-0.93	-1.39
115°	-0.27	-0.31	-0.24	0.08	0.27	-0.03	-0.26	-0.41	-0.39	-0.29	-0.50	-0.89
120°	-0.27	-0.32	-0.31	-0.05	0.15	-0.05	-0.12	-0.30	-0.50	-0.57	-0.54	-0.47
125°	-0.28	-0.34	-0.36	-0.16	0.00	-0.18	-0.05	-0.13	-0.36	-0.70	-0.88	-0.62
130°	-0.28	-0.34	-0.38	-0.25	-0.15	-0.39	-0.14	-0.07	-0.16	-0.54	-0.99	-1.05
135°	-0.26	-0.32	-0.38	-0.30	-0.27	-0.61	-0.40	-0.24	-0.14	-0.36	-0.75	-1.06
140°	-0.24	-0.30	-0.36	-0.31	-0.32	-0.77	-0.73	-0.58	-0.41	-0.46	-0.62	-0.77
145°	-0.23	-0.27	-0.32	-0.28	-0.31	-0.84	-0.99	-0.95	-0.85	-0.88	-0.92	-0.81
150°	-0.20	-0.24	-0.28	-0.23	-0.26	-0.78	-1.09	-1.16	-1.21	-1.36	-1.49	-1.32
155°	-0.19	-0.21	-0.23	-0.16	-0.16	-0.65	-1.00	-1.12	-1.29	-1.58	-1.92	-1.92
160°	-0.17	-0.17	-0.19	-0.09	-0.06	-0.48	-0.79	-0.90	-1.09	-1.43	-1.89	-2.07
165°	-0.16	-0.15	-0.14	-0.03	0.03	-0.33	-0.56	-0.62	-0.76	-1.06	-1.51	-1.71
170°	-0.14	-0.13	-0.11	0.02	0.10	-0.21	-0.37	-0.38	-0.46	-0.69	-1.06	-1.19
175°	-0.14	-0.13	-0.10	0.05	0.14	-0.13	-0.24	-0.22	-0.26	-0.43	-0.74	-0.81
180°	-0.12	-0.11	-0.09	0.06	0.16	-0.10	-0.19	-0.16	-0.19	-0.34	-0.62	-0.66
185°	-0.14	-0.13	-0.10	0.05	0.15	-0.13	-0.23	-0.20	-0.25	-0.42	-0.72	-0.79
190°	-0.15	-0.13	-0.12	0.02	0.10	-0.21	-0.34	-0.35	-0.43	-0.65	-1.01	-1.16
195°	-0.16	-0.16	-0.15	-0.02	0.03	-0.33	-0.52	-0.58	-0.72	-1.01	-1.45	-1.68
200°	-0.19	-0.19	-0.19	-0.07	-0.07	-0.48	-0.74	-0.85	-1.04	-1.37	-1.85	-2.07
205°	-0.19	-0.21	-0.23	-0.13	-0.17	-0.64	-0.94	-1.08	-1.25	-1.54	-1.93	-1.97
210°	-0.21	-0.24	-0.27	-0.20	-0.27	-0.76	-1.03	-1.13	-1.20	-1.35	-1.55	-1.38
215°	-0.22	-0.27	-0.32	-0.25	-0.34	-0.81	-0.96	-0.95	-0.86	-0.90	-0.98	-0.84
220°	-0.24	-0.29	-0.35	-0.28	-0.35	-0.74	-0.72	-0.59	-0.43	-0.49	-0.65	-0.75
225°	-0.27	-0.32	-0.37	-0.28	-0.30	-0.57	-0.40	-0.24	-0.15	-0.37	-0.72	-1.02
230°	-0.27	-0.34	-0.36	-0.22	-0.19	-0.34	-0.15	-0.06	-0.16	-0.53	-0.96	-1.06
235°	-0.30	-0.35	-0.33	-0.14	-0.03	-0.14	-0.05	-0.11	-0.36	-0.70	-0.90	-0.66
240°	-0.29	-0.33	-0.28	-0.04	0.13	0.00	-0.12	-0.29	-0.52	-0.59	-0.59	-0.47
245°	-0.27	-0.30	-0.21	0.07	0.25	0.02	-0.27	-0.42	-0.43	-0.33	-0.52	-0.86
250°	-0.27	-0.27	-0.13	0.18	0.32	-0.05	-0.37	-0.37	-0.22	-0.30	-0.91	-1.39
255°	-0.23	-0.21	-0.04	0.26	0.33	-0.16	-0.35	-0.24	-0.17	-0.63	-1.37	-1.41
260°	-0.21	-0.16	0.04	0.31	0.28	-0.24	-0.26	-0.19	-0.40	-1.05	-1.33	-1.20
265°	-0.18	-0.11	0.09	0.32	0.20	-0.26	-0.21	-0.33	-0.76	-1.09	-1.05	-1.21
270°	-0.14	-0.05	0.13	0.30	0.12	-0.23	-0.28	-0.59	-0.90	-0.78	-0.99	-1.30
275°	-0.10	-0.01	0.15	0.26	0.07	-0.19	-0.46	-0.78	-0.69	-0.60	-1.13	-1.13
280°	-0.09	0.01	0.16	0.21	0.04	-0.18	-0.63	-0.73	-0.40	-0.67	-1.09	-0.85
285°	-0.07	0.04	0.15	0.17	0.05	-0.23	-0.68	-0.50	-0.30	-0.78	-0.84	-0.79
290°	-0.04	0.07	0.13	0.12	0.07	-0.32	-0.58	-0.29	-0.40	-0.67	-0.67	-0.78
295°	-0.01	0.09	0.11	0.09	0.08	-0.41	-0.39	-0.21	-0.50	-0.43	-0.68	-0.68
300°	0.01	0.10	0.07	0.07	0.08	-0.47	-0.23	-0.26	-0.43	-0.29	-0.70	-0.54
305°	0.01	0.08	0.05	0.07	0.06	-0.47	-0.16	-0.32	-0.24	-0.32	-0.60	-0.44
310°	0.03	0.08	0.01	0.08	0.02	-0.41	-0.17	-0.33	-0.08	-0.38	-0.45	-0.41
315°	0.05	0.08	-0.01	0.09	-0.03	-0.30	-0.21	-0.26	-0.02	-0.38	-0.34	-0.36
320°	0.05	0.06	-0.02	0.09	-0.07	-0.20	-0.23	-0.14	-0.05	-0.28	-0.31	-0.24
325°	0.03	0.03	-0.02	0.08	-0.09	-0.11	-0.23	-0.04	-0.11	-0.16	-0.31	-0.12
330°	0.03	0.02	-0.01	0.07	-0.09	-0.06	-0.19	0.03	-0.15	-0.06	-0.30	-0.05
335°	0.03	0.02	-0.01	0.06	-0.08	-0.02	-0.14	0.05	-0.15	-0.01	-0.24	-0.02
340°	0.02	0.02	0.00	0.04	-0.06	-0.01	-0.09	0.04	-0.12	0.01	-0.17	-0.01
345°	0.01	0.00	0.00	0.02	-0.04	0.00	-0.05	0.03	-0.08	0.01	-0.10	-0.01
350°	0.02	0.01	0.00	0.01	-0.02	0.00	-0.02	0.02	-0.04	0.01	-0.04	0.00
355°	0.02	0.02	0.00	0.00	-0.01	0.00	0.00	0.01	-0.01	0.01	-0.01	0.00

Tabella A.22 Risposta direzionale per microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurato in un piano parallelo al display e lungo l'asse del microfono, 4000 Hz – 10600 Hz

Angolo	Frequenza											
	4000 Hz	4500 Hz	5000 Hz	5600 Hz	6300 Hz	7100 Hz	8000 Hz	8500 Hz	9000 Hz	9500 Hz	10000 Hz	10600 Hz
0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00
5°	0.00	-0.01	-0.02	-0.02	0.00	-0.02	-0.02	-0.03	-0.04	-0.06	-0.06	-0.02
10°	0.00	-0.04	-0.07	-0.07	0.00	-0.06	-0.06	-0.10	-0.16	-0.20	-0.19	-0.07
15°	-0.02	-0.10	-0.18	-0.19	-0.05	-0.07	-0.17	-0.22	-0.33	-0.39	-0.33	-0.12
20°	-0.07	-0.20	-0.29	-0.40	-0.21	-0.07	-0.32	-0.35	-0.41	-0.53	-0.37	-0.17
25°	-0.14	-0.30	-0.33	-0.58	-0.48	-0.14	-0.38	-0.40	-0.42	-0.64	-0.33	-0.26
30°	-0.23	-0.36	-0.22	-0.57	-0.66	-0.36	-0.35	-0.48	-0.62	-0.95	-0.60	-0.68
35°	-0.29	-0.36	-0.13	-0.49	-0.61	-0.54	-0.48	-0.70	-0.96	-1.20	-1.04	-1.07
40°	-0.31	-0.42	-0.29	-0.70	-0.73	-0.59	-0.83	-0.82	-1.02	-1.16	-1.26	-1.14
45°	-0.37	-0.60	-0.55	-1.05	-1.15	-0.91	-0.99	-0.91	-1.20	-1.65	-1.72	-1.74
50°	-0.51	-0.72	-0.50	-0.91	-1.08	-1.29	-1.18	-1.29	-1.40	-1.76	-1.70	-2.07
55°	-0.66	-0.69	-0.49	-0.91	-1.17	-1.37	-1.47	-1.44	-1.61	-2.05	-2.27	-2.21
60°	-0.70	-0.79	-0.87	-1.28	-1.63	-1.81	-1.85	-1.78	-2.01	-2.12	-2.48	-2.73
65°	-0.71	-1.06	-0.94	-1.10	-1.46	-1.64	-2.17	-2.11	-2.21	-2.75	-2.49	-2.97
70°	-0.84	-1.11	-0.93	-1.45	-1.80	-2.18	-2.42	-2.58	-2.60	-2.86	-3.16	-3.04
75°	-1.00	-1.10	-1.31	-1.64	-1.68	-1.97	-2.53	-2.80	-3.21	-3.28	-3.45	-3.68
80°	-1.06	-1.26	-1.22	-1.64	-2.10	-2.40	-2.93	-2.88	-3.37	-3.93	-3.73	-4.26
85°	-1.16	-1.39	-1.31	-2.07	-2.16	-2.27	-2.80	-3.29	-3.33	-4.15	-4.39	-4.41
90°	-1.40	-1.46	-1.51	-1.72	-2.47	-2.78	-3.20	-3.20	-3.85	-4.04	-4.55	-4.82
95°	-1.65	-1.77	-1.53	-2.22	-2.30	-2.81	-3.38	-3.56	-3.88	-4.34	-4.67	-4.84
100°	-1.65	-2.06	-1.92	-2.06	-2.60	-2.92	-3.44	-3.86	-4.09	-4.67	-4.77	-5.46
105°	-1.60	-2.10	-2.25	-2.61	-2.63	-2.96	-3.66	-3.81	-4.36	-5.03	-5.01	-5.75
110°	-1.69	-2.03	-2.35	-2.93	-3.13	-3.13	-3.48	-3.70	-4.23	-4.79	-5.53	-5.71
115°	-1.57	-2.02	-2.24	-3.01	-3.61	-3.86	-4.05	-4.15	-4.30	-4.65	-5.03	-5.43
120°	-1.01	-1.72	-1.95	-2.93	-3.52	-4.28	-4.90	-4.70	-5.10	-5.55	-5.19	-5.50
125°	-0.64	-1.13	-1.59	-2.22	-3.31	-4.08	-4.88	-5.63	-5.95	-6.31	-6.61	-6.98
130°	-0.97	-0.95	-1.05	-1.89	-2.25	-3.19	-4.68	-4.84	-5.49	-6.38	-7.10	-7.56
135°	-1.45	-1.46	-1.11	-1.46	-2.11	-2.33	-3.03	-3.83	-4.68	-5.62	-5.90	-6.50
140°	-1.30	-1.80	-1.82	-1.91	-2.01	-2.40	-2.89	-2.82	-3.19	-3.88	-4.50	-5.41
145°	-1.02	-1.50	-1.87	-2.61	-2.74	-2.75	-3.15	-3.42	-3.69	-4.08	-4.25	-4.40
150°	-1.34	-1.49	-1.55	-2.29	-3.03	-3.49	-3.89	-3.98	-4.28	-4.64	-4.80	-5.42
155°	-2.06	-2.16	-1.97	-2.32	-2.79	-3.26	-4.13	-4.49	-5.04	-5.69	-5.75	-5.89
160°	-2.47	-2.82	-2.83	-3.20	-3.46	-3.66	-4.04	-4.30	-4.73	-5.36	-5.85	-6.31
165°	-2.19	-2.68	-2.98	-3.69	-4.14	-4.67	-5.14	-5.24	-5.63	-6.02	-6.16	-6.52
170°	-1.58	-2.00	-2.28	-3.03	-3.52	-4.23	-5.15	-5.46	-6.10	-6.74	-7.16	-7.71
175°	-1.10	-1.42	-1.56	-2.17	-2.51	-3.00	-3.76	-4.04	-4.55	-5.20	-5.70	-6.22
180°	-0.92	-1.20	-1.28	-1.82	-2.09	-2.46	-3.07	-3.30	-3.70	-4.24	-4.65	-5.05
185°	-1.08	-1.39	-1.52	-2.12	-2.45	-2.91	-3.63	-3.92	-4.42	-5.04	-5.53	-6.03
190°	-1.55	-1.97	-2.21	-2.95	-3.43	-4.09	-4.95	-5.31	-5.95	-6.59	-7.04	-7.60
195°	-2.16	-2.66	-2.93	-3.66	-4.10	-4.63	-5.10	-5.23	-5.63	-6.03	-6.16	-6.57
200°	-2.49	-2.86	-2.87	-3.27	-3.51	-3.75	-4.09	-4.29	-4.69	-5.35	-5.85	-6.32
205°	-2.12	-2.25	-2.04	-2.38	-2.82	-3.31	-4.15	-4.53	-5.05	-5.69	-5.84	-5.90
210°	-1.39	-1.55	-1.57	-2.29	-2.99	-3.51	-3.93	-3.99	-4.36	-4.67	-4.75	-5.43
215°	-1.03	-1.47	-1.85	-2.62	-2.75	-2.84	-3.20	-3.49	-3.80	-4.21	-4.40	-4.47
220°	-1.24	-1.78	-1.83	-1.95	-2.06	-2.47	-2.95	-2.92	-3.19	-3.80	-4.36	-5.29
225°	-1.42	-1.53	-1.12	-1.49	-2.10	-2.32	-2.95	-3.65	-4.56	-5.51	-5.93	-6.36
230°	-1.00	-0.98	-1.03	-1.90	-2.25	-3.14	-4.61	-4.86	-5.48	-6.32	-7.05	-7.56
235°	-0.66	-1.10	-1.56	-2.19	-2.21	-4.05	-4.83	-5.59	-5.96	-6.42	-6.64	-7.06
240°	-1.01	-1.68	-1.93	-2.85	-3.56	-4.20	-4.97	-4.78	-5.11	-5.54	-5.29	-5.51
245°	-1.58	-1.98	-2.19	-3.04	-3.62	-3.92	-3.97	-4.22	-4.33	-4.66	-5.03	-5.41
250°	-1.67	-2.00	-2.38	-2.91	-3.24	-3.15	-3.55	-3.72	-4.15	-4.81	-5.48	-5.66
255°	-1.55	-2.10	-2.29	-2.68	-2.66	-3.01	-3.60	-3.83	-4.33	-5.09	-4.97	-5.67
260°	-1.62	-2.13	-1.94	-2.08	-2.60	-2.85	-3.49	-3.88	-4.14	-4.64	-4.75	-5.46
265°	-1.70	-1.78	-1.53	-2.21	-2.27	-2.85	-3.42	-3.54	-3.84	-4.29	-4.76	-4.84
270°	-1.43	-1.48	-1.52	-1.76	-2.48	-2.76	-3.13	-3.18	-3.83	-4.09	-4.57	-4.85
275°	-1.16	-1.40	-1.33	-2.05	-2.17	-2.30	-2.81	-3.31	-3.36	-4.18	-4.38	-4.44
280°	-1.07	-1.27	-1.24	-1.68	-2.11	-2.37	-2.95	-2.95	-3.39	-3.90	-3.72	-4.30
285°	-1.02	-1.11	-1.32	-1.62	-1.67	-2.02	-2.54	-2.79	-3.21	-3.28	-3.48	-3.67
290°	-0.85	-1.11	-0.93	-1.47	-1.78	-2.19	-2.43	-2.61	-2.63	-2.93	-3.20	-3.00
295°	-0.73	-1.06	-0.93	-1.07	-1.46	-1.64	-2.17	-2.16	-2.26	-2.82	-2.49	-2.98
300°	-0.73	-0.78	-0.84	-1.27	-1.67	-1.79	-1.83	-1.78	-2.00	-2.12	-2.48	-2.77
305°	-0.66	-0.68	-0.52	-0.88	-1.23	-1.34	-1.52	-1.44	-1.61	-2.09	-2.29	-2.22
310°	-0.51	-0.72	-0.50	-0.90	-1.09	-1.28	-1.17	-1.35	-1.41	-1.75	-1.76	-2.06
315°	-0.37	-0.57	-0.53	-1.09	-1.17	-0.95	-1.01	-0.90	-1.21	-1.66	-1.76	-1.74
320°	-0.32	-0.40	-0.29	-0.73	-0.74	-0.59	-0.84	-0.80	-1.06	-1.21	-1.27	-1.16
325°	-0.30	-0.36	-0.14	-0.48	-0.59	-0.57	-0.50	-0.71	-0.96	-1.19	-1.07	-1.08
330°	-0.23	-0.36	-0.22	-0.57	-0.64	-0.35	-0.34	-0.50	-0.62	-0.96	-0.60	-0.70
335°	-0.14	-0.30	-0.31	-0.62	-0.47	-0.12	-0.37	-0.43	-0.43	-0.65	-0.33	-0.27
340°	-0.06	-0.20	-0.27	-0.44	-0.20	-0.06	-0.32	-0.39	-0.39	-0.52	-0.37	-0.15
345°	-0.02	-0.11	-0.15	-0.21	-0.03	-0.06	-0.17	-0.25	-0.30	-0.39	-0.34	-0.12
350°	0.00	-0.04	-0.06	-0.07	0.01	-0.05	-0.06	-0.11	-0.16	-0.20	-0.19	-0.07
355°	0.00	-0.01	-0.01	-0.01	0.00	-0.02	-0.01	-0.02	-0.04	-0.06	-0.05	-0.02

Tabella A.23 Risposta direzionale per microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurato in un piano parallelo al display e lungo l'asse del microfono, 4000 Hz – 10600 Hz

Angolo	Frequenza										
	11200 Hz	11800 Hz	12500 Hz	13200 Hz	14000 Hz	15000 Hz	16000 Hz	17000 Hz	18000 Hz	19000 Hz	20000 Hz
0°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5°	-0.03	-0.03	-0.04	-0.03	-0.02	-0.04	-0.02	-0.06	-0.04	-0.05	-0.04
10°	-0.10	-0.09	-0.13	-0.13	-0.08	-0.15	-0.09	-0.24	-0.13	-0.16	-0.15
15°	-0.20	-0.14	-0.26	-0.26	-0.24	-0.24	-0.36	-0.44	-0.25	-0.37	-0.35
20°	-0.36	-0.29	-0.46	-0.39	-0.43	-0.40	-0.75	-0.67	-0.49	-0.73	-0.76
25°	-0.44	-0.49	-0.84	-0.71	-0.51	-0.71	-0.92	-1.12	-0.78	-1.01	-1.17
30°	-0.61	-0.62	-1.01	-1.11	-1.05	-0.86	-1.39	-1.49	-1.19	-1.45	-1.79
35°	-0.90	-1.10	-1.35	-1.43	-1.28	-1.27	-1.58	-2.11	-1.74	-1.76	-2.34
40°	-1.04	-1.07	-1.53	-1.89	-1.90	-1.67	-1.99	-2.45	-2.42	-2.33	-2.79
45°	-1.67	-1.59	-2.07	-2.26	-2.35	-2.22	-2.47	-2.84	-3.09	-3.03	-3.35
50°	-1.96	-1.97	-2.21	-2.54	-2.84	-2.86	-3.04	-3.32	-3.59	-3.82	-4.15
55°	-2.32	-2.24	-2.55	-2.90	-3.19	-3.42	-3.69	-3.91	-4.14	-4.45	-5.00
60°	-2.90	-2.92	-3.33	-3.44	-3.67	-3.85	-4.28	-4.68	-4.79	-5.03	-5.77
65°	-3.20	-3.55	-3.91	-4.15	-4.18	-4.29	-4.83	-5.40	-5.55	-5.84	-6.37
70°	-3.38	-3.80	-4.38	-4.77	-4.86	-4.80	-5.26	-5.97	-6.25	-6.75	-7.20
75°	-3.58	-3.99	-4.71	-5.23	-5.47	-5.59	-5.94	-6.54	-6.79	-7.51	-8.12
80°	-4.19	-4.12	-4.98	-5.59	-5.95	-6.18	-6.89	-7.37	-7.46	-8.04	-9.08
85°	-4.96	-4.75	-5.12	-5.92	-6.34	-6.64	-7.39	-8.13	-8.22	-8.69	-9.33
90°	-5.24	-5.41	-5.86	-6.14	-6.65	-6.97	-7.64	-8.51	-8.77	-9.52	-10.13
95°	-5.60	-5.82	-6.32	-6.97	-7.17	-7.31	-7.99	-9.00	-9.65	-10.21	-11.05
100°	-5.32	-6.21	-6.64	-7.33	-7.82	-8.19	-8.51	-9.42	-9.73	-10.56	-11.82
105°	-5.77	-6.40	-6.68	-7.63	-8.14	-8.55	-9.30	-10.22	-10.28	-11.05	-11.72
110°	-6.03	-6.83	-7.25	-7.76	-8.23	-8.61	-9.63	-10.63	-11.13	-11.92	-12.67
115°	-6.25	-6.52	-7.56	-8.39	-8.81	-9.02	-10.06	-10.53	-11.14	-12.14	-13.35
120°	-5.98	-5.97	-7.31	-7.89	-8.63	-9.40	-10.62	-11.12	-11.98	-12.27	-13.10
125°	-6.42	-6.54	-7.59	-7.35	-7.93	-8.58	-9.62	-10.88	-11.82	-13.15	-14.36
130°	-7.93	-8.89	-8.89	-8.46	-9.22	-9.10	-9.26	-10.07	-10.31	-11.84	-12.60
135°	-7.62	-8.48	-8.83	-10.16	-11.94	-11.46	-11.53	-12.38	-11.89	-12.33	-12.58
140°	-5.90	-6.36	-7.47	-9.09	-10.01	-9.98	-11.34	-13.95	-14.93	-15.62	-16.98
145°	-4.59	-5.12	-6.15	-6.82	-7.30	-7.91	-9.51	-11.22	-11.50	-12.14	-14.13
150°	-5.80	-5.99	-6.23	-6.55	-6.90	-7.41	-8.31	-9.06	-9.32	-10.32	-11.84
155°	-6.22	-6.62	-7.44	-8.14	-8.63	-8.96	-9.46	-9.94	-10.14	-10.88	-12.02
160°	-6.63	-7.17	-7.97	-8.69	-9.18	-9.51	-10.24	-11.10	-11.83	-12.91	-14.07
165°	-6.75	-6.91	-7.56	-8.09	-8.77	-9.37	-10.52	-11.69	-12.31	-13.16	-14.07
170°	-8.20	-8.55	-9.15	-9.52	-9.70	-9.85	-10.24	-10.94	-11.23	-11.98	-13.07
175°	-6.77	-7.54	-8.50	-9.43	-10.20	-10.87	-11.83	-12.77	-13.37	-14.13	-15.19
180°	-5.45	-6.07	-6.89	-7.67	-8.36	-8.96	-9.98	-10.93	-11.64	-12.68	-13.94
185°	-6.57	-7.31	-8.22	-9.15	-9.91	-10.59	-11.57	-12.54	-13.16	-14.10	-15.50
190°	-8.13	-8.50	-9.12	-9.59	-9.77	-9.93	-10.35	-11.01	-11.24	-11.96	-12.99
195°	-6.81	-6.92	-7.58	-8.08	-8.71	-9.29	-10.44	-11.67	-12.35	-13.39	-14.45
200°	-6.68	-7.25	-8.05	-8.77	-9.29	-9.57	-10.27	-11.01	-11.54	-12.60	-14.10
205°	-6.18	-6.57	-7.38	-8.03	-8.60	-9.02	-9.65	-10.21	-10.39	-11.01	-12.01
210°	-5.91	-6.15	-6.46	-6.68	-6.99	-7.46	-8.31	-9.06	-9.33	-10.16	-11.41
215°	-4.59	-5.04	-6.07	-6.75	-7.27	-7.74	-9.30	-11.03	-11.45	-12.08	-13.62
220°	-5.82	-6.30	-7.26	-8.88	-9.92	-9.97	-11.13	-13.59	-14.74	-15.53	-17.80
225°	-7.51	-8.44	-8.83	-9.99	-11.74	-11.75	-11.83	-12.64	-12.01	-12.44	-13.14
230°	-7.92	-8.84	-9.17	-8.66	-9.18	-9.24	-9.52	-10.26	-10.14	-11.72	-12.44
235°	-6.49	-6.56	-7.54	-7.46	-7.85	-8.51	-9.69	-10.87	-11.57	-13.25	-14.28
240°	-5.94	-6.04	-7.10	-7.83	-8.55	-9.30	-10.68	-11.20	-11.95	-12.25	-13.00
245°	-6.17	-6.60	-7.40	-8.38	-8.78	-9.02	-9.98	-10.39	-11.05	-12.09	-13.27
250°	-6.01	-6.92	-7.20	-7.78	-8.13	-8.58	-9.67	-10.51	-11.14	-12.02	-12.79
255°	-5.77	-6.37	-6.64	-7.63	-8.12	-8.55	-9.38	-10.31	-10.32	-10.98	-11.59
260°	-5.41	-6.14	-6.69	-7.41	-7.95	-8.30	-8.55	-9.39	-9.75	-10.56	-11.91
265°	-5.72	-5.79	-6.32	-6.96	-7.25	-7.43	-8.04	-9.05	-9.61	-10.25	-10.94
270°	-5.26	-5.34	-5.91	-6.19	-6.68	-7.03	-7.66	-8.53	-8.81	-9.64	-10.14
275°	-4.94	-4.76	-5.17	-5.92	-6.38	-6.67	-7.42	-8.13	-8.22	-8.66	-9.26
280°	-4.16	-4.16	-5.03	-5.57	-5.97	-6.25	-6.97	-7.42	-7.51	-8.00	-9.11
285°	-3.55	-4.02	-4.73	-5.21	-5.52	-5.68	-6.07	-6.58	-6.78	-7.58	-8.08
290°	-3.39	-3.80	-4.38	-4.76	-4.94	-4.86	-5.28	-5.97	-6.28	-6.71	-7.20
295°	-3.23	-3.52	-3.89	-4.12	-4.27	-4.32	-4.81	-5.48	-5.49	-5.90	-6.36
300°	-2.93	-2.88	-3.30	-3.43	-3.72	-3.87	-4.31	-4.71	-4.81	-5.07	-5.78
305°	-2.34	-2.24	-2.54	-2.88	-3.24	-3.46	-3.74	-3.91	-4.16	-4.46	-5.03
310°	-2.02	-2.00	-2.23	-2.52	-2.85	-2.89	-3.10	-3.33	-3.60	-3.85	-4.15
315°	-1.66	-1.58	-2.04	-2.24	-2.32	-2.25	-2.52	-2.83	-3.15	-3.04	-3.32
320°	-1.05	-1.04	-1.50	-1.88	-1.88	-1.71	-2.04	-2.48	-2.46	-2.37	-2.78
325°	-0.88	-1.09	-1.38	-1.45	-1.31	-1.27	-1.65	-2.13	-1.75	-1.79	-2.31
330°	-0.60	-0.63	-1.00	-1.08	-1.04	-0.90	-1.40	-1.50	-1.21	-1.47	-1.76
335°	-0.44	-0.48	-0.86	-0.73	-0.53	-0.73	-0.95	-1.13	-0.82	-1.02	-1.15
340°	-0.37	-0.28	-0.45	-0.38	-0.41	-0.42	-0.76	-0.69	-0.51	-0.74	-0.75
345°	-0.20	-0.14	-0.27	-0.26	-0.24	-0.25	-0.38	-0.44	-0.27	-0.38	-0.36
350°	-0.09	-0.08	-0.15	-0.13	-0.09	-0.16	-0.07	-0.23	-0.13	-0.16	-0.13
355°	-0.03	-0.02	-0.04	-0.03	-0.02	-0.04	-0.01	-0.06	-0.04	-0.06	-0.04

Tabella A.24 Risposta direzionale per microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurato in un piano parallelo al display e lungo l'asse del microfono, 11200 Hz – 20000 Hz

Angolo	Frequenza											
	500 Hz	630 Hz	800 Hz	1000 Hz	1250 Hz	1600 Hz	2000 Hz	2240 Hz	2500 Hz	2800 Hz	3150 Hz	3550 Hz
0°	-0.01	-0.01	-0.01	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
5°	0.01	0.01	-0.01	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.01	-0.03
10°	0.00	0.00	0.00	0.00	-0.02	-0.01	-0.02	0.00	-0.03	-0.02	-0.02	-0.05
15°	0.01	0.00	0.00	0.01	-0.04	0.00	-0.05	0.01	-0.06	-0.03	-0.06	-0.07
20°	0.02	0.00	0.00	0.02	-0.05	-0.02	-0.09	0.01	-0.11	-0.03	-0.13	-0.08
25°	0.01	0.00	0.00	0.04	-0.07	-0.04	-0.13	0.02	-0.15	-0.05	-0.23	-0.07
30°	0.01	0.00	-0.01	0.05	-0.09	-0.07	-0.19	0.01	-0.18	-0.08	-0.33	-0.03
35°	-0.01	0.00	-0.02	0.06	-0.09	-0.13	-0.23	-0.03	-0.17	-0.15	-0.42	-0.02
40°	0.02	0.03	-0.02	0.06	-0.08	-0.21	-0.26	-0.11	-0.14	-0.25	-0.45	-0.09
45°	0.01	0.04	-0.01	0.05	-0.05	-0.32	-0.25	-0.21	-0.10	-0.34	-0.45	-0.26
50°	0.01	0.06	0.01	0.04	-0.01	-0.44	-0.22	-0.30	-0.13	-0.37	-0.51	-0.47
55°	-0.02	0.06	0.05	0.03	0.02	-0.52	-0.22	-0.31	-0.27	-0.32	-0.65	-0.55
60°	-0.03	0.06	0.10	0.03	0.02	-0.54	-0.28	-0.27	-0.45	-0.28	-0.75	-0.55
65°	-0.06	0.04	0.13	0.05	0.01	-0.49	-0.42	-0.24	-0.53	-0.38	-0.72	-0.66
70°	-0.07	0.03	0.17	0.09	-0.02	-0.41	-0.61	-0.31	-0.46	-0.61	-0.64	-0.84
75°	-0.09	0.00	0.19	0.15	-0.04	-0.33	-0.75	-0.51	-0.37	-0.74	-0.74	-0.82
80°	-0.12	-0.03	0.19	0.22	-0.05	-0.29	-0.76	-0.76	-0.46	-0.66	-1.01	-0.74
85°	-0.14	-0.07	0.18	0.30	-0.01	-0.31	-0.64	-0.87	-0.75	-0.61	-1.09	-0.93
90°	-0.18	-0.11	0.15	0.35	0.09	-0.36	-0.49	-0.76	-1.01	-0.84	-0.95	-1.19
95°	-0.22	-0.17	0.09	0.37	0.21	-0.38	-0.43	-0.55	-0.94	-1.19	-1.07	-1.10
100°	-0.25	-0.23	0.00	0.36	0.32	-0.33	-0.46	-0.44	-0.65	-1.19	-1.52	-1.08
105°	-0.27	-0.27	-0.09	0.29	0.39	-0.19	-0.51	-0.48	-0.47	-0.81	-1.62	-1.55
110°	-0.29	-0.31	-0.18	0.18	0.38	-0.03	-0.45	-0.55	-0.56	-0.56	-1.14	-1.72
115°	-0.30	-0.34	-0.26	0.04	0.30	0.07	-0.25	-0.45	-0.69	-0.69	-0.79	-1.14
120°	-0.31	-0.37	-0.33	-0.11	0.14	0.04	-0.04	-0.18	-0.54	-0.86	-0.93	-0.79
125°	-0.31	-0.37	-0.38	-0.24	-0.05	-0.12	0.03	0.06	-0.17	-0.63	-1.11	-1.01
130°	-0.30	-0.38	-0.40	-0.33	-0.24	-0.38	-0.11	0.08	0.09	-0.18	-0.80	-1.06
135°	-0.29	-0.36	-0.40	-0.38	-0.38	-0.66	-0.44	-0.18	0.01	0.02	-0.31	-0.56
140°	-0.29	-0.35	-0.37	-0.38	-0.44	-0.88	-0.85	-0.64	-0.42	-0.26	-0.26	-0.17
145°	-0.29	-0.33	-0.34	-0.34	-0.42	-0.97	-1.16	-1.10	-1.02	-0.92	-0.81	-0.45
150°	-0.25	-0.29	-0.28	-0.27	-0.35	-0.93	-1.27	-1.35	-1.46	-1.58	-1.66	-1.33
155°	-0.23	-0.26	-0.23	-0.20	-0.24	-0.79	-1.17	-1.31	-1.54	-1.84	-2.25	-2.22
160°	-0.22	-0.24	-0.18	-0.12	-0.13	-0.61	-0.95	-1.06	-1.28	-1.61	-2.18	-2.39
165°	-0.20	-0.21	-0.14	-0.05	-0.03	-0.44	-0.70	-0.75	-0.91	-1.17	-1.70	-1.90
170°	-0.19	-0.19	-0.11	0.00	0.05	-0.30	-0.50	-0.49	-0.58	-0.75	-1.18	-1.27
175°	-0.18	-0.18	-0.09	0.04	0.10	-0.22	-0.37	-0.32	-0.36	-0.48	-0.82	-0.83
180°	-0.20	-0.19	-0.08	0.05	0.12	-0.19	-0.32	-0.26	-0.28	-0.37	-0.69	-0.66
185°	-0.19	-0.18	-0.09	0.04	0.10	-0.22	-0.36	-0.30	-0.34	-0.44	-0.77	-0.77
190°	-0.19	-0.19	-0.11	0.02	0.06	-0.31	-0.47	-0.44	-0.53	-0.68	-1.08	-1.14
195°	-0.20	-0.21	-0.14	-0.03	-0.01	-0.44	-0.66	-0.68	-0.84	-1.08	-1.57	-1.74
200°	-0.23	-0.24	-0.18	-0.10	-0.11	-0.61	-0.89	-0.98	-1.22	-1.52	-2.09	-2.30
205°	-0.23	-0.26	-0.23	-0.17	-0.22	-0.80	-1.12	-1.24	-1.52	-1.81	-2.28	-2.32
210°	-0.26	-0.31	-0.28	-0.25	-0.33	-0.95	-1.24	-1.35	-1.54	-1.67	-1.84	-1.58
215°	-0.27	-0.33	-0.32	-0.31	-0.41	-1.02	-1.18	-1.18	-1.18	-1.09	-1.02	-0.68
220°	-0.30	-0.36	-0.37	-0.36	-0.44	-0.96	-0.92	-0.78	-0.61	-0.44	-0.41	-0.28
225°	-0.31	-0.38	-0.39	-0.36	-0.40	-0.76	-0.55	-0.33	-0.14	-0.10	-0.34	-0.55
230°	-0.32	-0.39	-0.39	-0.32	-0.29	-0.48	-0.22	-0.05	0.00	-0.21	-0.74	-1.01
235°	-0.33	-0.40	-0.37	-0.24	-0.13	-0.22	-0.06	-0.02	-0.18	-0.57	-1.09	-1.03
240°	-0.32	-0.37	-0.32	-0.12	0.04	-0.04	-0.10	-0.20	-0.48	-0.79	-0.96	-0.75
245°	-0.32	-0.35	-0.26	0.02	0.19	0.01	-0.27	-0.41	-0.62	-0.67	-0.76	-0.99
250°	-0.30	-0.31	-0.17	0.15	0.27	-0.06	-0.43	-0.48	-0.53	-0.55	-1.04	-1.64
255°	-0.28	-0.27	-0.08	0.25	0.29	-0.19	-0.47	-0.41	-0.46	-0.77	-1.57	-1.66
260°	-0.25	-0.21	0.00	0.31	0.24	-0.30	-0.41	-0.38	-0.63	-1.18	-1.59	-1.15
265°	-0.22	-0.16	0.08	0.33	0.17	-0.34	-0.38	-0.51	-0.95	-1.25	-1.13	-1.04
270°	-0.19	-0.11	0.13	0.31	0.07	-0.31	-0.46	-0.74	-1.06	-0.90	-0.94	-1.19
275°	-0.16	-0.07	0.16	0.25	0.01	-0.26	-0.63	-0.90	-0.83	-0.60	-1.07	-1.01
280°	-0.12	-0.03	0.18	0.18	-0.01	-0.24	-0.76	-0.82	-0.50	-0.63	-1.05	-0.76
285°	-0.11	-0.01	0.17	0.12	0.00	-0.29	-0.77	-0.58	-0.37	-0.71	-0.81	-0.82
290°	-0.07	0.03	0.15	0.06	0.03	-0.38	-0.64	-0.34	-0.44	-0.60	-0.67	-0.89
295°	-0.05	0.04	0.12	0.03	0.06	-0.48	-0.45	-0.25	-0.52	-0.39	-0.75	-0.67
300°	-0.03	0.06	0.08	0.02	0.06	-0.53	-0.29	-0.29	-0.43	-0.30	-0.80	-0.45
305°	0.00	0.06	0.04	0.02	0.04	-0.51	-0.22	-0.33	-0.24	-0.36	-0.64	-0.41
310°	0.01	0.05	0.01	0.04	0.01	-0.43	-0.23	-0.31	-0.10	-0.45	-0.42	-0.42
315°	0.01	0.04	-0.02	0.07	-0.04	-0.32	-0.27	-0.22	-0.06	-0.42	-0.31	-0.37
320°	0.03	0.04	-0.03	0.07	-0.08	-0.20	-0.27	-0.10	-0.11	-0.28	-0.29	-0.26
325°	0.02	0.01	-0.02	0.08	-0.10	-0.11	-0.25	-0.01	-0.17	-0.13	-0.30	-0.16
330°	0.03	0.01	-0.01	0.07	-0.10	-0.05	-0.19	0.04	-0.19	-0.03	-0.28	-0.11
335°	0.02	0.01	0.00	0.05	-0.08	-0.02	-0.14	0.05	-0.18	0.03	-0.23	-0.08
340°	0.01	0.00	0.00	0.04	-0.06	0.00	-0.08	0.05	-0.13	0.04	-0.16	-0.05
345°	0.00	-0.01	0.00	0.02	-0.03	0.00	-0.04	0.04	-0.08	0.04	-0.09	-0.02
350°	0.00	0.00	0.00	0.01	-0.01	0.00	-0.01	0.02	-0.03	0.04	-0.04	0.01
355°	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.02	0.00	0.02

Tabella A.25 Risposta direzionale per microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurata in un piano perpendicolare al display e lungo l'asse del microfono, 4000 Hz – 10600 Hz

Angolo	Frequenza											
	4000 Hz	4500 Hz	5000 Hz	5600 Hz	6300 Hz	7100 Hz	8000 Hz	8500 Hz	9000 Hz	9500 Hz	10000 Hz	10600 Hz
0°	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
5°	0.00	-0.02	-0.02	-0.06	-0.05	0.00	-0.03	-0.06	0.01	-0.03	-0.03	0.02
10°	0.01	-0.03	-0.03	-0.13	-0.11	0.01	-0.10	-0.09	0.04	-0.10	-0.07	0.04
15°	0.01	-0.06	-0.05	-0.23	-0.22	0.02	-0.17	-0.10	0.02	-0.29	-0.15	0.00
20°	0.00	-0.12	-0.06	-0.31	-0.35	-0.07	-0.14	-0.11	-0.16	-0.62	-0.27	-0.21
25°	-0.04	-0.19	-0.05	-0.31	-0.39	-0.27	-0.09	-0.32	-0.59	-0.84	-0.37	-0.51
30°	-0.13	-0.26	-0.05	-0.27	-0.32	-0.43	-0.28	-0.64	-0.84	-0.75	-0.57	-0.66
35°	-0.24	-0.30	-0.14	-0.40	-0.41	-0.40	-0.70	-0.57	-0.84	-1.00	-1.23	-0.90
40°	-0.33	-0.34	-0.33	-0.71	-0.86	-0.61	-0.67	-0.64	-1.25	-1.56	-1.30	-1.04
45°	-0.35	-0.42	-0.47	-0.81	-1.05	-1.03	-0.84	-1.17	-1.19	-1.65	-1.47	-1.69
50°	-0.31	-0.56	-0.49	-0.68	-0.94	-0.99	-1.12	-1.11	-1.52	-2.00	-1.96	-1.82
55°	-0.36	-0.74	-0.56	-0.97	-1.40	-1.43	-1.17	-1.53	-1.86	-1.92	-2.35	-2.29
60°	-0.57	-0.78	-0.73	-1.23	-1.50	-1.63	-1.77	-1.53	-1.99	-2.69	-2.21	-2.57
65°	-0.77	-0.77	-0.83	-1.12	-1.43	-1.61	-1.74	-2.22	-2.26	-2.61	-2.97	-2.76
70°	-0.80	-1.00	-0.97	-1.40	-1.92	-2.12	-2.35	-2.20	-2.91	-3.00	-3.00	-3.34
75°	-0.90	-1.24	-1.02	-1.51	-1.71	-1.92	-2.29	-2.80	-2.89	-3.76	-3.32	-3.46
80°	-1.09	-1.24	-1.24	-1.57	-2.07	-2.51	-2.74	-2.83	-3.50	-3.64	-4.23	-3.80
85°	-1.02	-1.39	-1.48	-1.81	-2.15	-2.29	-2.83	-3.04	-3.64	-4.12	-4.10	-4.68
90°	-1.05	-1.52	-1.50	-2.00	-2.29	-2.65	-3.00	-3.46	-3.59	-4.51	-4.44	-4.65
95°	-1.38	-1.44	-1.73	-2.18	-2.62	-2.73	-3.34	-3.35	-4.22	-4.41	-4.66	-4.95
100°	-1.42	-1.75	-1.68	-2.27	-2.69	-2.96	-3.24	-3.74	-4.13	-4.64	-4.97	-4.97
105°	-1.32	-1.88	-1.90	-2.42	-2.89	-3.20	-3.75	-3.74	-4.19	-4.93	-5.10	-5.34
110°	-1.77	-1.79	-2.20	-2.55	-2.95	-3.16	-3.82	-4.31	-4.69	-5.08	-5.09	-5.73
115°	-1.93	-2.26	-2.07	-2.84	-3.22	-3.50	-3.88	-4.05	-4.90	-5.56	-5.70	-5.69
120°	-1.19	-2.24	-2.47	-2.77	-3.42	-3.66	-4.24	-4.59	-4.97	-5.33	-5.85	-6.24
125°	-0.92	-1.40	-2.17	-3.14	-3.37	-3.84	-4.42	-4.77	-5.39	-6.11	-5.97	-6.24
130°	-1.29	-1.37	-1.39	-2.36	-3.52	-3.66	-4.49	-5.00	-5.80	-6.24	-6.45	-6.60
135°	-1.14	-1.70	-1.62	-1.87	-2.41	-3.37	-4.17	-4.61	-5.28	-6.24	-6.80	-6.98
140°	-0.48	-1.17	-1.72	-2.40	-2.68	-2.55	-3.40	-3.97	-4.77	-5.41	-5.75	-6.47
145°	-0.31	-0.62	-0.99	-1.90	-2.83	-3.28	-3.43	-3.72	-4.13	-4.58	-4.67	-5.14
150°	-1.04	-1.00	-0.88	-1.25	-1.85	-2.57	-3.57	-4.09	-4.88	-5.41	-5.26	-5.27
155°	-2.22	-2.23	-1.95	-1.97	-2.03	-2.06	-2.61	-3.04	-3.78	-4.61	-5.11	-5.50
160°	-2.81	-3.25	-3.32	-3.70	-3.80	-3.57	-3.45	-3.54	-3.83	-4.25	-4.51	-4.69
165°	-2.38	-3.01	-3.41	-4.34	-5.04	-5.65	-6.00	-6.19	-6.56	-6.82	-6.86	-6.98
170°	-1.60	-2.13	-2.45	-3.29	-3.95	-4.80	-5.76	-6.34	-7.26	-8.04	-8.67	-9.69
175°	-1.04	-1.44	-1.61	-2.24	-2.66	-3.14	-3.77	-4.16	-4.84	-5.45	-5.88	-6.41
180°	-0.81	-1.16	-1.27	-1.82	-2.14	-2.46	-2.93	-3.23	-3.78	-4.28	-4.60	-4.90
185°	-0.95	-1.33	-1.49	-2.09	-2.48	-2.89	-3.46	-3.85	-4.49	-5.07	-5.51	-5.86
190°	-1.44	-1.93	-2.23	-3.01	-3.60	-4.36	-5.27	-5.86	-6.78	-7.59	-8.17	-8.85
195°	-2.17	-2.79	-3.22	-4.13	-4.88	-5.76	-6.39	-6.75	-7.25	-7.68	-7.57	-7.80
200°	-2.74	-3.26	-3.45	-3.96	-4.30	-4.20	-3.99	-4.03	-4.29	-4.63	-4.71	-4.86
205°	-2.43	-2.56	-2.28	-2.37	-2.50	-2.29	-2.67	-3.03	-3.72	-4.42	-4.82	-5.20
210°	-1.34	-1.31	-1.09	-1.45	-1.95	-2.38	-3.44	-4.05	-4.95	-5.49	-5.40	-5.61
215°	-0.50	-0.75	-1.00	-1.89	-2.63	-3.43	-3.62	-3.74	-3.94	-4.24	-4.46	-4.69
220°	-0.48	-1.14	-1.66	-2.45	-2.78	-2.58	-2.79	-3.24	-4.32	-5.44	-5.87	-6.37
225°	-1.07	-1.68	-1.71	-1.90	-2.28	-2.74	-4.19	-4.94	-5.51	-6.13	-6.53	-6.92
230°	-1.30	-1.37	-1.29	-2.15	-3.18	-4.11	-4.41	-4.82	-5.84	-6.55	-6.60	-6.65
235°	-0.91	-1.21	-1.94	-3.15	-3.70	-3.66	-4.58	-5.02	-5.34	-6.09	-6.33	-6.48
240°	-1.02	-2.03	-2.66	-2.91	-3.36	-4.02	-4.02	-4.43	-5.30	-5.68	-6.13	-6.39
245°	-1.80	-2.43	-2.09	-2.90	-3.41	-3.32	-4.06	-4.39	-5.06	-5.63	-5.33	-5.81
250°	-1.91	-1.81	-2.14	-2.72	-3.00	-3.49	-3.83	-4.16	-4.39	-5.33	-5.74	-5.61
255°	-1.35	-1.82	-2.14	-2.43	-3.11	-3.19	-3.54	-3.91	-4.77	-4.99	-5.17	-5.22
260°	-1.32	-1.92	-1.66	-2.46	-2.85	-2.94	-3.55	-3.80	-4.27	-4.67	-4.95	-5.40
265°	-1.45	-1.46	-1.85	-2.31	-2.53	-3.04	-3.19	-3.50	-4.03	-4.78	-4.83	-4.89
270°	-1.14	-1.54	-1.68	-1.98	-2.63	-2.57	-2.94	-3.44	-3.93	-4.49	-4.46	-5.14
275°	-0.99	-1.59	-1.38	-1.97	-2.19	-2.39	-2.91	-3.18	-3.67	-4.27	-4.73	-4.23
280°	-1.16	-1.21	-1.32	-1.86	-2.07	-2.37	-2.68	-2.90	-3.72	-4.01	-4.05	-4.01
285°	-0.98	-1.09	-1.26	-1.45	-1.83	-2.07	-2.30	-3.01	-3.08	-3.89	-3.50	-3.72
290°	-0.73	-1.10	-1.06	-1.47	-1.86	-1.97	-2.53	-2.36	-3.16	-3.17	-3.29	-3.40
295°	-0.66	-0.98	-0.78	-1.23	-1.52	-1.71	-1.81	-2.43	-2.40	-2.92	-3.01	-2.80
300°	-0.64	-0.83	-0.76	-1.18	-1.48	-1.72	-1.89	-1.70	-2.29	-2.55	-2.38	-2.66
305°	-0.54	-0.61	-0.68	-1.05	-1.36	-1.30	-1.36	-1.68	-1.84	-2.22	-2.40	-2.47
310°	-0.42	-0.49	-0.53	-0.77	-1.17	-1.03	-1.17	-1.22	-1.72	-2.02	-1.93	-1.91
315°	-0.31	-0.48	-0.40	-0.79	-1.11	-1.16	-0.98	-1.25	-1.19	-1.79	-1.73	-1.74
320°	-0.18	-0.45	-0.33	-0.74	-0.80	-0.59	-0.72	-0.79	-1.30	-1.47	-1.47	-1.17
325°	-0.06	-0.37	-0.20	-0.57	-0.52	-0.41	-0.72	-0.59	-0.93	-1.22	-1.14	-0.99
330°	-0.02	-0.24	-0.08	-0.41	-0.51	-0.49	-0.35	-0.70	-0.72	-0.96	-0.67	-0.60
335°	-0.01	-0.13	-0.03	-0.30	-0.48	-0.31	-0.12	-0.43	-0.61	-0.78	-0.54	-0.54
340°	-0.02	-0.05	0.00	-0.19	-0.32	-0.10	-0.13	-0.15	-0.41	-0.46	-0.36	-0.17
345°	-0.02	-0.01	0.00	-0.08	-0.15	-0.01	-0.16	-0.03	-0.22	-0.22	-0.20	0.05
350°	-0.01	0.00	0.01	-0.01	-0.03	0.00	-0.10	0.02	-0.10	-0.09	-0.10	0.03
355°	0.00	0.01	0.02	0.03	0.01	0.00	-0.02	0.03	-0.03	-0.01	-0.03	0.00

Tabella A.26 Risposta direzionale per microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurata in un piano perpendicolare al display e lungo l'asse del microfono, 11200 Hz – 20000 Hz

Angolo	Frequenza										
	11200 Hz	11800 Hz	12500 Hz	13200 Hz	14000 Hz	15000 Hz	16000 Hz	17000 Hz	18000 Hz	19000 Hz	20000 Hz
0°	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	-0.02	-0.02	-0.03
5°	-0.03	-0.02	0.00	-0.03	-0.04	-0.07	-0.03	-0.07	-0.06	-0.03	-0.04
10°	-0.08	-0.06	-0.07	-0.09	-0.07	-0.21	-0.09	-0.21	-0.11	-0.09	-0.13
15°	-0.17	-0.10	-0.20	-0.22	-0.16	-0.29	-0.38	-0.35	-0.21	-0.38	-0.39
20°	-0.37	-0.24	-0.42	-0.40	-0.42	-0.41	-0.77	-0.54	-0.55	-0.76	-0.76
25°	-0.56	-0.61	-0.82	-0.64	-0.62	-0.88	-0.91	-1.04	-0.78	-1.08	-1.22
30°	-0.57	-0.82	-1.04	-1.05	-0.99	-0.93	-1.53	-1.36	-1.20	-1.51	-1.73
35°	-1.01	-1.10	-1.27	-1.41	-1.34	-1.46	-1.68	-2.06	-1.62	-1.93	-2.31
40°	-1.26	-1.26	-1.77	-1.91	-1.84	-1.74	-2.11	-2.52	-2.28	-2.38	-2.78
45°	-1.64	-1.74	-2.02	-2.09	-2.21	-2.28	-2.69	-2.89	-2.97	-3.03	-3.31
50°	-1.93	-2.02	-2.22	-2.54	-2.77	-3.02	-3.19	-3.29	-3.57	-3.83	-4.09
55°	-2.58	-2.65	-2.99	-3.12	-3.28	-3.46	-3.77	-3.92	-4.17	-4.58	-4.99
60°	-2.75	-3.14	-3.45	-3.70	-3.62	-3.90	-4.36	-4.69	-4.81	-5.21	-5.81
65°	-3.12	-3.40	-3.94	-4.13	-4.17	-4.20	-5.00	-5.46	-5.50	-5.91	-6.47
70°	-3.43	-3.81	-4.35	-4.78	-4.68	-4.79	-5.33	-6.12	-6.23	-6.74	-7.18
75°	-3.98	-4.07	-4.74	-5.17	-5.46	-5.55	-6.06	-6.59	-6.91	-7.56	-8.21
80°	-4.11	-4.67	-4.95	-5.51	-5.92	-6.43	-7.11	-7.37	-7.51	-8.18	-8.92
85°	-4.47	-4.95	-5.49	-5.80	-6.27	-7.07	-8.06	-8.47	-8.12	-8.69	-9.20
90°	-5.12	-5.50	-6.11	-6.15	-6.75	-7.36	-8.47	-8.81	-8.89	-9.65	-10.41
95°	-5.44	-5.71	-6.95	-6.96	-7.14	-7.66	-8.45	-8.89	-9.42	-10.61	-11.90
100°	-5.84	-6.16	-7.08	-7.44	-8.08	-8.19	-8.47	-9.29	-10.03	-11.13	-12.34
105°	-5.91	-6.35	-7.39	-7.77	-8.19	-8.56	-9.57	-10.30	-10.33	-11.31	-12.05
110°	-6.04	-6.56	-7.45	-7.82	-8.62	-8.97	-10.12	-10.81	-11.10	-11.82	-12.57
115°	-6.01	-6.71	-7.56	-7.84	-8.70	-9.27	-10.80	-10.73	-11.21	-12.18	-14.08
120°	-6.50	-6.83	-7.44	-7.78	-8.90	-9.47	-10.65	-10.73	-11.73	-12.80	-14.50
125°	-6.60	-7.20	-8.01	-8.22	-9.04	-9.24	-10.30	-10.95	-11.48	-13.40	-14.14
130°	-7.09	-7.76	-8.19	-8.59	-9.49	-9.70	-10.66	-11.27	-11.08	-13.21	-13.15
135°	-7.34	-7.80	-8.44	-9.61	-10.12	-10.10	-11.21	-12.12	-11.73	-13.27	-14.13
140°	-7.03	-7.85	-8.92	-9.78	-9.74	-9.99	-11.63	-13.18	-12.52	-13.53	-15.89
145°	-6.02	-6.93	-7.96	-8.34	-8.93	-10.05	-12.10	-12.74	-12.04	-13.19	-15.36
150°	-5.50	-5.92	-6.43	-7.12	-8.14	-9.44	-10.38	-10.38	-10.58	-12.86	-15.08
155°	-6.29	-6.97	-7.65	-7.79	-7.89	-8.28	-9.05	-9.41	-10.29	-12.35	-13.30
160°	-5.06	-5.75	-6.48	-7.23	-8.32	-9.58	-10.51	-10.70	-10.88	-12.15	-12.23
165°	-6.90	-6.90	-7.07	-7.12	-7.58	-8.31	-9.19	-9.65	-10.48	-12.35	-13.01
170°	-10.70	-11.33	-12.16	-12.35	-12.47	-12.68	-12.73	-12.52	-12.50	-13.60	-13.59
175°	-7.28	-8.14	-9.11	-10.14	-11.21	-12.64	-13.70	-14.81	-15.90	-18.02	-19.05
180°	-5.52	-6.15	-6.83	-7.57	-8.33	-9.33	-10.18	-10.77	-11.50	-13.23	-13.60
185°	-6.60	-7.37	-8.21	-9.13	-10.04	-11.30	-12.33	-13.15	-14.00	-16.13	-17.06
190°	-9.97	-10.93	-12.15	-12.93	-13.77	-14.45	-14.83	-14.64	-14.58	-15.57	-15.50
195°	-7.86	-7.89	-8.00	-7.95	-8.26	-8.80	-9.59	-9.85	-10.34	-12.49	-13.19
200°	-5.20	-5.77	-6.44	-7.12	-7.95	-9.25	-10.68	-11.19	-11.69	-13.24	-13.64
205°	-6.10	-7.06	-8.18	-8.48	-8.59	-8.81	-9.47	-9.41	-9.66	-11.85	-13.22
210°	-5.76	-6.06	-6.41	-6.70	-7.38	-8.70	-10.16	-10.45	-10.02	-11.51	-13.70
215°	-5.45	-6.53	-7.89	-8.33	-8.57	-9.27	-11.67	-13.63	-12.64	-12.67	-14.75
220°	-6.78	-7.50	-8.80	-10.26	-10.30	-9.87	-11.26	-14.16	-13.32	-12.91	-16.45
225°	-7.57	-7.94	-8.63	-9.79	-10.65	-10.15	-10.69	-12.74	-12.76	-12.86	-14.69
230°	-7.12	-8.07	-8.48	-8.55	-9.95	-10.34	-10.15	-11.44	-11.34	-12.81	-14.44
235°	-6.57	-7.57	-8.44	-7.55	-8.76	-9.82	-10.34	-11.95	-11.17	-13.20	-14.39
240°	-6.31	-6.62	-7.90	-8.11	-8.99	-9.63	-10.48	-11.65	-11.43	-13.01	-14.40
245°	-6.64	-6.80	-7.80	-7.84	-8.58	-9.22	-10.90	-11.17	-10.97	-12.25	-14.19
250°	-6.20	-6.55	-7.54	-7.93	-8.67	-8.48	-10.19	-11.45	-11.35	-12.03	-13.37
255°	-6.12	-6.51	-7.37	-7.65	-8.40	-8.71	-9.66	-10.82	-10.99	-11.13	-12.71
260°	-5.69	-6.08	-7.14	-8.04	-8.19	-8.30	-9.18	-9.71	-10.50	-11.07	-12.80
265°	-5.38	-6.26	-6.64	-7.48	-7.83	-7.72	-8.62	-9.32	-9.65	-10.46	-12.13
270°	-4.91	-5.68	-6.26	-6.66	-6.99	-7.69	-8.36	-9.25	-9.15	-9.89	-10.49
275°	-4.79	-5.29	-5.50	-6.27	-6.48	-7.16	-8.16	-8.92	-8.77	-9.18	-9.77
280°	-4.40	-4.55	-5.41	-5.67	-6.24	-6.66	-7.58	-7.74	-7.79	-8.20	-9.12
285°	-3.92	-4.32	-4.91	-5.47	-5.77	-6.08	-6.33	-6.83	-7.01	-7.69	-8.62
290°	-3.49	-3.93	-4.60	-5.09	-5.18	-5.17	-5.63	-6.25	-6.51	-7.04	-7.73
295°	-3.23	-3.57	-4.26	-4.52	-4.54	-4.45	-5.18	-5.84	-5.89	-6.27	-6.82
300°	-2.99	-3.40	-3.84	-3.89	-3.79	-4.05	-4.72	-5.07	-5.12	-5.50	-6.29
305°	-2.70	-2.82	-3.02	-3.09	-3.29	-3.62	-4.01	-4.30	-4.50	-4.75	-5.41
310°	-2.05	-2.06	-2.37	-2.59	-2.89	-3.17	-3.55	-3.58	-3.74	-3.98	-4.38
315°	-1.82	-2.01	-2.27	-2.39	-2.48	-2.67	-2.90	-3.04	-3.14	-3.29	-3.65
320°	-1.33	-1.23	-1.67	-1.95	-2.02	-1.97	-2.34	-2.80	-2.57	-2.61	-3.05
325°	-1.11	-1.27	-1.47	-1.51	-1.56	-1.65	-1.84	-2.13	-1.86	-2.03	-2.50
330°	-0.55	-0.72	-1.03	-1.19	-1.16	-1.15	-1.73	-1.60	-1.43	-1.76	-1.87
335°	-0.68	-0.77	-0.91	-0.87	-0.74	-0.89	-0.99	-1.17	-0.89	-1.19	-1.36
340°	-0.34	-0.31	-0.38	-0.40	-0.57	-0.57	-0.89	-0.68	-0.62	-0.84	-0.86
345°	-0.04	-0.08	-0.23	-0.24	-0.28	-0.34	-0.49	-0.44	-0.38	-0.52	-0.49
350°	0.00	-0.07	-0.20	-0.14	-0.07	-0.18	-0.06	-0.30	-0.09	-0.17	-0.12
355°	0.00	-0.03	-0.08	-0.04	0.00	-0.03	0.03	-0.07	0.00	-0.03	-0.01

Tabella A.27 Variazioni della sensibilità per microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, agli angoli d'incidenza sonora compresi tra $\pm\theta^\circ$ dalla direzione di riferimento

Frequenza nominale	Frequenza esatta	Variaz. max $\pm 30^\circ$ dB	Variaz. max $\pm 90^\circ$ dB	Variaz. max $\pm 150^\circ$ dB
500 Hz	501.187 Hz	0.04	0.24	0.38
630 Hz	630.957 Hz	0.03	0.21	0.50
800 Hz	794.328 Hz	0.02	0.22	0.60
1000 Hz	1000 Hz	0.08	0.36	0.76
1250 Hz	1258.93 Hz	0.10	0.22	0.83
1600 Hz	1584.89 Hz	0.07	0.54	1.09
2000 Hz	1995.26 Hz	0.20	0.78	1.30
2240 Hz	2238.72 Hz	0.06	0.95	1.43
2500 Hz	2511.89 Hz	0.21	1.08	1.63
2800 Hz	2818.38 Hz	0.12	0.94	1.71
3150 Hz	3162.28 Hz	0.35	1.14	1.86
3550 Hz	3548.13 Hz	0.13	1.33	1.73
4000 Hz	3981.07 Hz	0.25	1.44	1.94
4500 Hz	4466.84 Hz	0.38	1.60	2.44
5000 Hz	5011.87 Hz	0.34	1.69	2.67
5600 Hz	5623.41 Hz	0.65	2.09	3.17
6300 Hz	6309.57 Hz	0.68	2.65	3.72
7100 Hz	7079.46 Hz	0.51	2.80	4.30
8000 Hz	7943.28 Hz	0.40	3.22	4.98
8500 Hz	8413.95 Hz	0.73	3.49	5.66
9000 Hz	8912.51 Hz	0.88	3.97	6.00
9500 Hz	9440.61 Hz	0.98	4.52	6.56
10000 Hz	10000 Hz	0.69	4.75	7.12
10600 Hz	10592.5 Hz	0.75	5.19	7.61
11200 Hz	11220.2 Hz	0.69	5.28	7.95
11800 Hz	11885.0 Hz	0.84	5.70	8.91
12500 Hz	12589.3 Hz	1.06	6.28	9.19
13200 Hz	13335.2 Hz	1.21	6.68	10.27
14000 Hz	14125.4 Hz	1.17	7.00	11.96
15000 Hz	14962.4 Hz	1.16	7.70	11.77
16000 Hz	15848.9 Hz	1.76	8.50	12.14
17000 Hz	16788.0 Hz	1.62	9.26	14.18
18000 Hz	17782.8 Hz	1.45	9.16	14.95
19000 Hz	18836.5 Hz	1.77	9.91	15.64
20000 Hz	19952.6 Hz	1.90	10.52	17.82

Tabella A.28 Influenza dello schermo antivento UA-1650 sulla risposta direzionale, con o senza il preamplificatore ZC-0032 collegato ad un cavo d'estensione, 500 Hz – 3550 Hz

Angolo	Frequenza											
	500 Hz	630 Hz	800 Hz	1000 Hz	1250 Hz	1600 Hz	2000 Hz	2240 Hz	2500 Hz	2800 Hz	3150 Hz	3550 Hz
0°	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
5°	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01
10°	-0.01	0.00	0.00	-0.01	-0.01	0.00	-0.01	0.00	0.00	0.00	0.00	0.00
15°	0.00	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.01	0.00
20°	0.00	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	0.00	0.02	0.01
25°	-0.01	-0.01	0.00	-0.01	-0.01	-0.02	-0.01	-0.02	0.00	0.00	0.03	0.03
30°	-0.01	-0.01	0.00	-0.01	-0.02	-0.02	-0.02	-0.02	-0.01	0.00	0.04	0.04
35°	-0.01	-0.02	-0.01	-0.01	-0.03	-0.03	-0.03	-0.03	-0.02	0.01	0.05	0.06
40°	0.00	-0.01	-0.01	-0.02	-0.04	-0.04	-0.05	-0.03	-0.03	0.02	0.06	0.07
45°	-0.01	-0.02	-0.02	-0.02	-0.05	-0.05	-0.07	-0.04	-0.04	0.02	0.06	0.09
50°	0.00	-0.01	-0.02	-0.02	-0.06	-0.06	-0.08	-0.06	-0.05	0.01	0.07	0.11
55°	-0.01	-0.01	-0.02	-0.03	-0.07	-0.08	-0.10	-0.08	-0.06	-0.01	0.07	0.12
60°	-0.01	-0.01	-0.03	-0.04	-0.07	-0.10	-0.11	-0.11	-0.07	-0.01	0.07	0.14
65°	-0.01	-0.01	-0.03	-0.05	-0.08	-0.12	-0.12	-0.13	-0.10	-0.02	0.07	0.15
70°	-0.01	-0.01	-0.03	-0.05	-0.09	-0.13	-0.14	-0.14	-0.13	-0.04	0.06	0.15
75°	-0.02	-0.02	-0.04	-0.06	-0.09	-0.15	-0.16	-0.15	-0.15	-0.06	0.06	0.15
80°	-0.02	-0.02	-0.04	-0.06	-0.10	-0.16	-0.19	-0.17	-0.16	-0.09	0.04	0.14
85°	-0.03	-0.03	-0.04	-0.07	-0.11	-0.17	-0.22	-0.19	-0.18	-0.10	0.01	0.14
90°	-0.02	-0.02	-0.05	-0.07	-0.12	-0.18	-0.23	-0.22	-0.20	-0.11	-0.01	0.12
95°	-0.02	-0.03	-0.05	-0.07	-0.13	-0.18	-0.24	-0.24	-0.23	-0.14	-0.02	0.09
100°	-0.02	-0.03	-0.05	-0.07	-0.12	-0.19	-0.25	-0.25	-0.24	-0.17	-0.04	0.08
105°	-0.02	-0.02	-0.06	-0.07	-0.12	-0.19	-0.26	-0.26	-0.25	-0.19	-0.08	0.06
110°	-0.03	-0.03	-0.05	-0.08	-0.12	-0.19	-0.26	-0.27	-0.25	-0.19	-0.09	0.02
115°	-0.03	-0.04	-0.05	-0.07	-0.12	-0.19	-0.26	-0.27	-0.26	-0.18	-0.08	0.00
120°	-0.04	-0.04	-0.05	-0.07	-0.12	-0.19	-0.26	-0.26	-0.26	-0.18	-0.07	0.03
125°	-0.03	-0.03	-0.05	-0.07	-0.12	-0.18	-0.25	-0.25	-0.26	-0.18	-0.07	0.04
130°	-0.03	-0.04	-0.05	-0.07	-0.13	-0.18	-0.25	-0.24	-0.24	-0.17	-0.06	0.04
135°	-0.03	-0.04	-0.05	-0.07	-0.12	-0.17	-0.24	-0.23	-0.23	-0.15	-0.04	0.06
140°	-0.03	-0.04	-0.05	-0.07	-0.12	-0.16	-0.24	-0.22	-0.22	-0.13	-0.03	0.08
145°	-0.03	-0.04	-0.06	-0.08	-0.13	-0.15	-0.24	-0.22	-0.21	-0.12	-0.01	0.11
150°	-0.03	-0.04	-0.06	-0.08	-0.12	-0.15	-0.24	-0.22	-0.20	-0.12	0.00	0.12
155°	-0.03	-0.04	-0.06	-0.07	-0.13	-0.15	-0.23	-0.22	-0.20	-0.11	0.01	0.13
160°	-0.03	-0.04	-0.06	-0.07	-0.13	-0.15	-0.23	-0.21	-0.19	-0.11	0.02	0.13
165°	-0.03	-0.04	-0.06	-0.07	-0.13	-0.15	-0.23	-0.21	-0.19	-0.10	0.02	0.14
170°	-0.03	-0.04	-0.06	-0.07	-0.13	-0.15	-0.22	-0.21	-0.19	-0.10	0.03	0.15
175°	-0.04	-0.04	-0.06	-0.07	-0.13	-0.16	-0.22	-0.21	-0.19	-0.10	0.03	0.15
180°	-0.05	-0.05	-0.05	-0.07	-0.13	-0.16	-0.22	-0.21	-0.19	-0.10	0.03	0.15
185°	-0.03	-0.03	-0.06	-0.07	-0.12	-0.16	-0.23	-0.21	-0.19	-0.10	0.03	0.15
190°	-0.04	-0.05	-0.06	-0.07	-0.13	-0.16	-0.23	-0.22	-0.20	-0.11	0.02	0.14
195°	-0.03	-0.04	-0.06	-0.07	-0.13	-0.16	-0.23	-0.22	-0.20	-0.11	0.02	0.13
200°	-0.03	-0.04	-0.06	-0.07	-0.13	-0.16	-0.24	-0.22	-0.21	-0.12	0.01	0.13
205°	-0.03	-0.04	-0.06	-0.07	-0.13	-0.16	-0.24	-0.23	-0.21	-0.12	0.00	0.12
210°	-0.03	-0.04	-0.06	-0.07	-0.13	-0.16	-0.24	-0.23	-0.22	-0.12	0.00	0.11
215°	-0.03	-0.04	-0.06	-0.08	-0.13	-0.16	-0.25	-0.23	-0.22	-0.13	-0.01	0.10
220°	-0.04	-0.05	-0.06	-0.08	-0.13	-0.17	-0.25	-0.23	-0.22	-0.14	-0.03	0.08
225°	-0.04	-0.04	-0.06	-0.08	-0.13	-0.18	-0.25	-0.24	-0.23	-0.15	-0.05	0.05
230°	-0.03	-0.04	-0.06	-0.08	-0.13	-0.18	-0.25	-0.25	-0.24	-0.17	-0.07	0.04
235°	-0.03	-0.04	-0.06	-0.08	-0.13	-0.19	-0.26	-0.26	-0.26	-0.19	-0.07	0.04
240°	-0.03	-0.04	-0.06	-0.08	-0.12	-0.20	-0.26	-0.27	-0.26	-0.19	-0.07	0.03
245°	-0.03	-0.04	-0.06	-0.08	-0.13	-0.20	-0.27	-0.27	-0.26	-0.18	-0.08	0.00
250°	-0.03	-0.04	-0.05	-0.08	-0.13	-0.20	-0.26	-0.27	-0.26	-0.19	-0.09	0.01
255°	-0.03	-0.04	-0.06	-0.08	-0.13	-0.20	-0.26	-0.26	-0.25	-0.19	-0.08	0.06
260°	-0.02	-0.03	-0.05	-0.07	-0.13	-0.19	-0.25	-0.25	-0.25	-0.18	-0.04	0.08
265°	-0.03	-0.04	-0.05	-0.07	-0.13	-0.18	-0.24	-0.24	-0.23	-0.14	-0.01	0.09
270°	-0.02	-0.03	-0.05	-0.07	-0.12	-0.17	-0.23	-0.22	-0.21	-0.11	0.00	0.11
275°	-0.04	-0.04	-0.04	-0.07	-0.12	-0.16	-0.21	-0.20	-0.18	-0.10	0.01	0.15
280°	-0.02	-0.02	-0.04	-0.07	-0.10	-0.15	-0.19	-0.17	-0.16	-0.08	0.04	0.15
285°	-0.02	-0.03	-0.04	-0.06	-0.10	-0.14	-0.16	-0.15	-0.14	-0.05	0.06	0.15
290°	-0.02	-0.02	-0.04	-0.05	-0.09	-0.13	-0.14	-0.13	-0.12	-0.03	0.07	0.16
295°	-0.01	-0.01	-0.03	-0.05	-0.08	-0.11	-0.12	-0.12	-0.09	-0.01	0.07	0.16
300°	-0.02	-0.03	-0.03	-0.04	-0.07	-0.09	-0.11	-0.10	-0.06	0.00	0.08	0.15
305°	-0.01	-0.02	-0.03	-0.03	-0.06	-0.08	-0.09	-0.07	-0.05	0.01	0.08	0.14
310°	-0.01	-0.02	-0.02	-0.03	-0.05	-0.06	-0.08	-0.05	-0.04	0.02	0.08	0.12
315°	-0.02	-0.03	-0.02	-0.02	-0.04	-0.05	-0.06	-0.03	-0.03	0.03	0.07	0.11
320°	0.00	-0.01	-0.01	-0.02	-0.03	-0.03	-0.04	-0.02	-0.02	0.02	0.07	0.08
325°	-0.01	-0.01	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	0.00	0.02	0.07	0.07
330°	-0.01	-0.01	0.00	-0.01	-0.01	-0.02	-0.01	-0.01	0.01	0.02	0.06	0.06
335°	0.00	-0.01	0.00	0.00	-0.01	-0.01	0.00	-0.01	0.01	0.02	0.05	0.05
340°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.03	0.04
345°	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.03	0.03
350°	-0.01	-0.01	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.02	0.02	0.02
355°	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.02	0.02

Tabella A.29 Influenza dello schermo antivento UA-1650 sulla risposta direzionale, con o senza il preamplificatore ZC-0032 collegato ad un cavo d'estensione, 4000 Hz – 10600 Hz

Angolo	Frequenza											
	4000 Hz	4500 Hz	5000 Hz	5600 Hz	6300 Hz	7100 Hz	8000 Hz	8500 Hz	9000 Hz	9500 Hz	10000 Hz	10600 Hz
0°	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.02	-0.01	-0.01	-0.01
5°	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.02	-0.01	0.00	0.00	-0.02
10°	-0.01	-0.01	-0.02	-0.01	0.01	0.00	-0.06	-0.04	-0.02	0.02	0.00	-0.05
15°	-0.01	-0.02	-0.03	-0.01	0.03	0.02	-0.11	-0.10	-0.03	0.06	0.01	-0.08
20°	0.00	-0.03	-0.06	-0.02	0.06	0.05	-0.20	-0.18	-0.05	0.08	0.03	-0.10
25°	0.00	-0.04	-0.09	-0.03	0.09	0.10	-0.27	-0.26	-0.08	0.10	0.05	-0.11
30°	0.01	-0.05	-0.13	-0.06	0.10	0.14	-0.31	-0.36	-0.17	0.06	0.07	-0.11
35°	0.02	-0.06	-0.16	-0.08	0.12	0.19	-0.34	-0.50	-0.28	0.03	0.12	-0.07
40°	0.03	-0.07	-0.19	-0.11	0.15	0.28	-0.37	-0.56	-0.38	-0.04	0.08	-0.05
45°	0.04	-0.07	-0.24	-0.18	0.14	0.34	-0.32	-0.62	-0.54	-0.17	0.06	0.03
50°	0.06	-0.08	-0.28	-0.24	0.11	0.35	-0.25	-0.65	-0.59	-0.30	-0.03	0.00
55°	0.09	-0.07	-0.30	-0.27	0.10	0.43	-0.14	-0.58	-0.67	-0.40	-0.11	-0.01
60°	0.11	-0.06	-0.31	-0.34	0.02	0.42	-0.04	-0.51	-0.64	-0.47	-0.25	-0.08
65°	0.12	-0.05	-0.33	-0.40	0.00	0.41	0.05	-0.40	-0.61	-0.48	-0.30	-0.20
70°	0.14	-0.03	-0.33	-0.40	-0.04	0.35	0.11	-0.34	-0.51	-0.47	-0.32	-0.23
75°	0.15	-0.01	-0.32	-0.43	-0.10	0.29	0.10	-0.28	-0.48	-0.40	-0.32	-0.22
80°	0.15	-0.01	-0.32	-0.44	-0.10	0.24	0.01	-0.28	-0.46	-0.39	-0.25	-0.19
85°	0.14	-0.01	-0.33	-0.45	-0.12	0.23	-0.02	-0.35	-0.46	-0.40	-0.24	-0.13
90°	0.14	-0.02	-0.35	-0.47	-0.12	0.22	-0.17	-0.36	-0.51	-0.39	-0.24	-0.08
95°	0.12	-0.04	-0.38	-0.50	-0.15	0.26	-0.15	-0.42	-0.53	-0.42	-0.25	-0.08
100°	0.07	-0.08	-0.42	-0.55	-0.16	0.28	-0.22	-0.46	-0.54	-0.45	-0.27	-0.11
105°	0.05	-0.13	-0.47	-0.60	-0.20	0.32	-0.21	-0.46	-0.60	-0.49	-0.31	-0.18
110°	0.03	-0.17	-0.55	-0.68	-0.23	0.33	-0.22	-0.52	-0.63	-0.57	-0.42	-0.23
115°	-0.01	-0.20	-0.62	-0.77	-0.33	0.32	-0.22	-0.57	-0.76	-0.69	-0.49	-0.31
120°	-0.01	-0.25	-0.65	-0.84	-0.42	0.25	-0.26	-0.66	-0.86	-0.83	-0.67	-0.33
125°	0.02	-0.23	-0.68	-0.89	-0.47	0.16	-0.37	-0.82	-1.06	-1.03	-0.76	-0.42
130°	0.03	-0.20	-0.64	-0.88	-0.52	0.10	-0.43	-0.95	-1.27	-1.25	-0.96	-0.62
135°	0.05	-0.18	-0.60	-0.79	-0.45	0.09	-0.40	-0.94	-1.31	-1.31	-1.08	-0.76
140°	0.08	-0.15	-0.57	-0.77	-0.40	0.12	-0.35	-0.85	-1.12	-1.13	-0.93	-0.75
145°	0.10	-0.11	-0.52	-0.71	-0.36	0.13	-0.32	-0.79	-0.99	-0.86	-0.64	-0.52
150°	0.13	-0.07	-0.46	-0.65	-0.30	0.17	-0.28	-0.73	-0.92	-0.75	-0.47	-0.38
155°	0.15	-0.05	-0.43	-0.60	-0.25	0.20	-0.23	-0.63	-0.76	-0.59	-0.38	-0.31
160°	0.16	-0.03	-0.41	-0.57	-0.21	0.22	-0.19	-0.53	-0.63	-0.45	-0.24	-0.26
165°	0.16	-0.02	-0.39	-0.55	-0.20	0.25	-0.14	-0.48	-0.55	-0.35	-0.17	-0.20
170°	0.17	0.00	-0.38	-0.53	-0.21	0.27	-0.11	-0.44	-0.48	-0.29	-0.17	-0.17
175°	0.18	0.01	-0.36	-0.52	-0.21	0.27	-0.10	-0.41	-0.45	-0.27	-0.15	-0.19
180°	0.18	0.01	-0.37	-0.53	-0.22	0.27	-0.11	-0.41	-0.45	-0.29	-0.16	-0.21
185°	0.17	0.00	-0.37	-0.54	-0.23	0.26	-0.13	-0.44	-0.48	-0.32	-0.19	-0.23
190°	0.16	-0.01	-0.39	-0.56	-0.24	0.25	-0.15	-0.48	-0.52	-0.34	-0.21	-0.21
195°	0.15	-0.03	-0.41	-0.58	-0.23	0.25	-0.15	-0.50	-0.57	-0.37	-0.20	-0.21
200°	0.14	-0.04	-0.43	-0.59	-0.23	0.24	-0.18	-0.55	-0.66	-0.48	-0.27	-0.28
205°	0.13	-0.05	-0.45	-0.61	-0.27	0.20	-0.24	-0.64	-0.77	-0.60	-0.37	-0.30
210°	0.12	-0.08	-0.48	-0.66	-0.32	0.19	-0.29	-0.73	-0.92	-0.75	-0.47	-0.37
215°	0.10	-0.12	-0.53	-0.73	-0.37	0.16	-0.32	-0.79	-1.01	-0.88	-0.63	-0.49
220°	0.07	-0.15	-0.58	-0.79	-0.40	0.13	-0.35	-0.85	-1.14	-1.15	-0.93	-0.72
225°	0.04	-0.18	-0.61	-0.81	-0.46	0.10	-0.39	-0.95	-1.34	-1.34	-1.10	-0.74
230°	0.03	-0.20	-0.65	-0.89	-0.52	0.10	-0.43	-0.96	-1.30	-1.30	-1.01	-0.64
235°	0.03	-0.24	-0.70	-0.91	-0.48	0.14	-0.36	-0.85	-1.13	-1.09	-0.81	-0.43
240°	-0.01	-0.26	-0.67	-0.87	-0.44	0.24	-0.28	-0.68	-0.91	-0.89	-0.70	-0.33
245°	-0.02	-0.20	-0.63	-0.81	-0.35	0.30	-0.21	-0.57	-0.78	-0.72	-0.50	-0.30
250°	0.03	-0.18	-0.57	-0.71	-0.27	0.30	-0.20	-0.51	-0.66	-0.61	-0.45	-0.23
255°	0.06	-0.15	-0.49	-0.62	-0.22	0.30	-0.19	-0.47	-0.62	-0.52	-0.33	-0.18
260°	0.07	-0.08	-0.43	-0.57	-0.18	0.27	-0.20	-0.46	-0.56	-0.49	-0.29	-0.10
265°	0.11	-0.05	-0.39	-0.52	-0.16	0.27	-0.15	-0.43	-0.55	-0.45	-0.26	-0.06
270°	0.14	-0.03	-0.36	-0.48	-0.13	0.23	-0.14	-0.36	-0.54	-0.42	-0.26	-0.07
275°	0.14	-0.01	-0.34	-0.46	-0.12	0.25	-0.01	-0.35	-0.48	-0.42	-0.26	-0.12
280°	0.15	-0.01	-0.32	-0.44	-0.10	0.26	0.04	-0.29	-0.48	-0.42	-0.27	-0.19
285°	0.16	-0.01	-0.32	-0.43	-0.09	0.32	0.11	-0.29	-0.50	-0.43	-0.33	-0.21
290°	0.15	-0.02	-0.33	-0.40	-0.03	0.36	0.12	-0.35	-0.53	-0.49	-0.33	-0.21
295°	0.14	-0.03	-0.33	-0.39	0.02	0.43	0.05	-0.40	-0.63	-0.50	-0.30	-0.19
300°	0.12	-0.05	-0.31	-0.33	0.05	0.43	-0.01	-0.52	-0.66	-0.49	-0.25	-0.07
305°	0.10	-0.06	-0.29	-0.26	0.12	0.45	-0.14	-0.59	-0.69	-0.41	-0.11	0.00
310°	0.08	-0.07	-0.26	-0.23	0.13	0.39	-0.24	-0.65	-0.61	-0.30	-0.03	0.00
315°	0.06	-0.06	-0.22	-0.17	0.16	0.37	-0.31	-0.63	-0.54	-0.17	0.06	0.03
320°	0.05	-0.05	-0.17	-0.10	0.17	0.29	-0.37	-0.56	-0.38	-0.04	0.08	-0.05
325°	0.03	-0.04	-0.14	-0.06	0.14	0.20	-0.34	-0.49	-0.27	0.04	0.13	-0.07
330°	0.02	-0.03	-0.11	-0.03	0.12	0.16	-0.30	-0.35	-0.16	0.07	0.08	-0.10
335°	0.02	-0.02	-0.07	-0.01	0.11	0.12	-0.26	-0.24	-0.07	0.11	0.06	-0.09
340°	0.02	0.00	-0.04	0.01	0.09	0.07	-0.18	-0.16	-0.03	0.11	0.05	-0.08
345°	0.01	0.01	-0.01	0.01	0.06	0.04	-0.09	-0.08	-0.01	0.08	0.03	-0.06
350°	0.01	0.01	0.01	0.02	0.04	0.02	-0.03	-0.03	0.01	0.05	0.02	-0.03
355°	0.01	0.01	0.01	0.02	0.03	0.02	0.00	0.00	0.02	0.03	0.02	0.00

Tabella A.30 Influenza dello schermo antivento UA-1650 sulla risposta direzionale, con o senza il preamplificatore ZC-0032 collegato ad un cavo d'estensione, 11200 Hz – 20000 Hz

Angolo	Frequenza										
	11200 Hz	11800 Hz	12500 Hz	13200 Hz	14000 Hz	15000 Hz	16000 Hz	17000 Hz	18000 Hz	19000 Hz	20000 Hz
0°	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02
5°	-0.03	-0.02	0.00	-0.01	-0.03	-0.01	0.00	-0.01	-0.02	-0.01	-0.03
10°	-0.08	-0.05	0.00	-0.03	-0.09	-0.02	0.01	-0.02	-0.04	-0.02	-0.08
15°	-0.16	-0.11	0.01	-0.05	-0.17	-0.09	0.04	-0.03	-0.11	-0.05	-0.15
20°	-0.25	-0.18	0.00	-0.09	-0.26	-0.20	0.04	-0.06	-0.20	-0.12	-0.22
25°	-0.35	-0.25	-0.01	-0.08	-0.36	-0.30	-0.07	-0.02	-0.27	-0.25	-0.31
30°	-0.46	-0.39	-0.09	-0.07	-0.38	-0.46	-0.16	-0.04	-0.28	-0.33	-0.37
35°	-0.49	-0.50	-0.18	-0.09	-0.40	-0.51	-0.33	-0.06	-0.21	-0.36	-0.40
40°	-0.52	-0.63	-0.30	-0.11	-0.33	-0.54	-0.40	-0.17	-0.08	-0.25	-0.37
45°	-0.46	-0.65	-0.41	-0.18	-0.31	-0.49	-0.40	-0.29	-0.02	-0.09	-0.30
50°	-0.43	-0.68	-0.53	-0.29	-0.29	-0.40	-0.38	-0.40	-0.16	-0.04	-0.29
55°	-0.36	-0.64	-0.57	-0.39	-0.32	-0.41	-0.39	-0.47	-0.39	-0.19	-0.36
60°	-0.38	-0.61	-0.58	-0.52	-0.43	-0.47	-0.46	-0.52	-0.58	-0.41	-0.44
65°	-0.45	-0.66	-0.63	-0.62	-0.55	-0.56	-0.53	-0.54	-0.65	-0.50	-0.53
70°	-0.51	-0.71	-0.70	-0.73	-0.66	-0.60	-0.56	-0.58	-0.63	-0.54	-0.81
75°	-0.51	-0.74	-0.73	-0.79	-0.80	-0.65	-0.59	-0.66	-0.71	-0.66	-0.90
80°	-0.45	-0.69	-0.73	-0.78	-0.90	-0.82	-0.74	-0.82	-0.80	-0.79	-0.85
85°	-0.37	-0.58	-0.70	-0.78	-0.94	-1.02	-1.01	-1.04	-0.80	-0.66	-0.77
90°	-0.32	-0.51	-0.64	-0.81	-0.95	-1.08	-1.14	-1.13	-0.83	-0.54	-0.91
95°	-0.29	-0.54	-0.68	-0.90	-0.91	-1.00	-0.93	-0.94	-0.81	-0.84	-1.70
100°	-0.33	-0.57	-0.75	-1.07	-0.94	-0.81	-0.65	-0.66	-0.86	-1.27	-1.98
105°	-0.36	-0.57	-0.74	-1.03	-1.05	-0.87	-0.57	-0.61	-0.88	-1.35	-1.35
110°	-0.39	-0.54	-0.61	-0.89	-1.09	-0.91	-0.80	-0.99	-0.99	-1.05	-0.90
115°	-0.42	-0.49	-0.51	-0.74	-1.10	-0.94	-0.86	-1.05	-1.12	-1.27	-1.01
120°	-0.40	-0.44	-0.50	-0.79	-1.10	-0.84	-0.82	-0.88	-1.32	-1.22	-1.30
125°	-0.48	-0.55	-0.64	-0.90	-1.04	-0.71	-0.58	-0.76	-1.30	-1.14	-1.29
130°	-0.70	-0.76	-0.96	-1.32	-1.09	-0.55	-0.48	-0.79	-0.94	-0.87	-0.95
135°	-0.92	-1.18	-1.61	-1.97	-1.32	-0.81	-0.82	-1.58	-0.59	-0.52	-0.82
140°	-0.99	-1.42	-1.93	-2.12	-1.62	-1.54	-1.96	-2.68	-1.05	-0.71	-1.78
145°	-0.86	-1.33	-1.70	-1.71	-1.58	-1.79	-2.53	-2.83	-1.56	-1.77	-3.84
150°	-0.80	-1.21	-1.29	-1.12	-1.14	-1.61	-2.29	-2.00	-1.49	-2.18	-4.05
155°	-0.74	-1.17	-1.15	-0.84	-0.84	-1.54	-1.89	-1.21	-0.94	-2.22	-2.77
160°	-0.71	-1.02	-0.88	-0.57	-0.77	-1.49	-1.73	-0.86	-0.77	-2.32	-1.91
165°	-0.67	-0.89	-0.66	-0.40	-0.68	-1.44	-1.37	-0.53	-0.64	-2.22	-1.47
170°	-0.58	-0.79	-0.47	-0.23	-0.59	-1.32	-1.16	-0.33	-0.57	-2.09	-1.28
175°	-0.57	-0.74	-0.47	-0.21	-0.58	-1.19	-1.07	-0.25	-0.43	-1.93	-1.08
180°	-0.60	-0.75	-0.48	-0.25	-0.60	-1.21	-1.08	-0.30	-0.43	-1.95	-1.03
185°	-0.62	-0.80	-0.54	-0.29	-0.64	-1.28	-1.22	-0.39	-0.49	-2.08	-1.24
190°	-0.61	-0.83	-0.51	-0.24	-0.60	-1.36	-1.25	-0.37	-0.56	-2.18	-1.38
195°	-0.67	-0.92	-0.70	-0.43	-0.70	-1.50	-1.54	-0.64	-0.62	-2.39	-1.76
200°	-0.73	-1.05	-0.95	-0.59	-0.74	-1.52	-1.88	-0.90	-0.69	-2.49	-2.34
205°	-0.73	-1.21	-1.24	-0.88	-0.83	-1.57	-2.09	-1.29	-0.79	-2.26	-3.02
210°	-0.80	-1.26	-1.40	-1.15	-1.08	-1.56	-2.44	-2.15	-1.37	-2.11	-4.31
215°	-0.82	-1.36	-1.80	-1.80	-1.54	-1.74	-2.59	-3.04	-1.46	-1.56	-4.08
220°	-0.96	-1.42	-2.02	-2.24	-1.68	-1.46	-1.99	-3.04	-1.21	-0.72	-2.45
225°	-0.89	-1.22	-1.73	-2.11	-1.49	-0.77	-0.94	-1.76	-0.53	-0.53	-1.05
230°	-0.68	-0.84	-1.08	-1.40	-1.11	-0.54	-0.56	-0.85	-0.82	-0.94	-1.40
235°	-0.47	-0.57	-0.71	-0.96	-1.03	-0.71	-0.71	-0.85	-1.14	-0.98	-2.13
240°	-0.39	-0.46	-0.56	-0.87	-1.08	-0.81	-0.99	-1.11	-1.14	-0.86	-1.81
245°	-0.41	-0.52	-0.59	-0.81	-1.06	-0.85	-1.00	-1.36	-1.03	-0.95	-1.15
250°	-0.37	-0.57	-0.70	-0.97	-1.05	-0.80	-0.82	-1.30	-1.04	-0.75	-0.95
255°	-0.33	-0.59	-0.82	-1.15	-1.07	-0.76	-0.55	-0.81	-0.97	-1.25	-1.60
260°	-0.29	-0.57	-0.83	-1.19	-0.98	-0.73	-0.65	-0.77	-0.88	-1.16	-2.36
265°	-0.26	-0.53	-0.76	-1.02	-0.95	-0.95	-0.95	-1.06	-0.83	-0.71	-1.96
270°	-0.29	-0.51	-0.71	-0.90	-0.97	-1.02	-1.19	-1.32	-0.86	-0.41	-1.04
275°	-0.35	-0.59	-0.75	-0.86	-0.94	-0.95	-1.07	-1.21	-0.89	-0.59	-0.90
280°	-0.43	-0.70	-0.78	-0.86	-0.90	-0.77	-0.77	-0.93	-0.86	-0.76	-1.00
285°	-0.50	-0.74	-0.80	-0.87	-0.80	-0.63	-0.61	-0.73	-0.71	-0.60	-1.07
290°	-0.50	-0.72	-0.77	-0.80	-0.66	-0.59	-0.60	-0.65	-0.61	-0.54	-0.92
295°	-0.44	-0.67	-0.70	-0.66	-0.53	-0.55	-0.57	-0.60	-0.65	-0.53	-0.66
300°	-0.37	-0.63	-0.62	-0.52	-0.39	-0.46	-0.50	-0.56	-0.60	-0.46	-0.49
305°	-0.37	-0.66	-0.59	-0.38	-0.29	-0.41	-0.43	-0.51	-0.42	-0.22	-0.40
310°	-0.44	-0.70	-0.54	-0.28	-0.27	-0.42	-0.42	-0.44	-0.17	-0.06	-0.32
315°	-0.48	-0.66	-0.41	-0.17	-0.32	-0.52	-0.45	-0.34	-0.03	-0.12	-0.36
320°	-0.52	-0.63	-0.29	-0.10	-0.35	-0.57	-0.45	-0.20	-0.08	-0.29	-0.42
325°	-0.48	-0.49	-0.17	-0.09	-0.40	-0.53	-0.37	-0.08	-0.22	-0.40	-0.44
330°	-0.45	-0.37	-0.07	-0.07	-0.39	-0.48	-0.19	-0.05	-0.29	-0.36	-0.40
335°	-0.34	-0.23	0.01	-0.07	-0.35	-0.32	-0.08	-0.01	-0.28	-0.27	-0.33
340°	-0.23	-0.15	0.02	-0.07	-0.25	-0.21	0.04	-0.03	-0.20	-0.13	-0.23
345°	-0.14	-0.08	0.03	-0.03	-0.17	-0.10	0.05	-0.02	-0.11	-0.05	-0.14
350°	-0.06	-0.03	0.03	-0.01	-0.09	-0.02	0.02	-0.01	-0.03	-0.02	-0.06
355°	-0.01	0.00	0.02	0.01	-0.01	0.01	0.02	0.01	0.00	0.00	0.00

Tabella A.31 Risposta direzionale per lo schermo antivento UA-1650, microfono 4191 e preamplificatore microfono ZC-0032, con preamplificatore collegato ad un cavo d'estensione, 500 Hz – 3550 Hz

Angolo	Frequenza											
	500 Hz	630 Hz	800 Hz	1000 Hz	1250 Hz	1600 Hz	2000 Hz	2240 Hz	2500 Hz	2800 Hz	3150 Hz	3550 Hz
0°	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
5°	0.00	0.01	0.00	-0.01	-0.01	-0.01	0.00	0.00	-0.02	-0.02	-0.01	-0.01
10°	0.00	0.00	0.00	-0.02	-0.01	-0.01	0.00	-0.01	-0.01	-0.03	-0.02	-0.01
15°	0.01	0.01	-0.01	-0.03	-0.02	-0.03	-0.01	-0.02	-0.03	-0.05	-0.02	-0.02
20°	0.01	0.01	0.00	-0.01	-0.02	-0.04	-0.02	-0.03	-0.04	-0.07	-0.04	-0.04
25°	0.00	0.00	0.00	-0.03	-0.03	-0.06	-0.04	-0.04	-0.06	-0.11	-0.07	-0.07
30°	0.01	0.00	0.00	-0.03	-0.06	-0.08	-0.07	-0.05	-0.09	-0.14	-0.11	-0.11
35°	0.00	-0.01	-0.02	-0.05	-0.08	-0.11	-0.10	-0.08	-0.12	-0.18	-0.15	-0.15
40°	0.01	-0.01	-0.03	-0.06	-0.10	-0.14	-0.13	-0.11	-0.16	-0.21	-0.20	-0.20
45°	-0.01	-0.03	-0.05	-0.07	-0.13	-0.17	-0.17	-0.14	-0.19	-0.25	-0.26	-0.26
50°	-0.01	-0.03	-0.06	-0.08	-0.15	-0.20	-0.22	-0.17	-0.22	-0.29	-0.31	-0.32
55°	-0.02	-0.04	-0.07	-0.11	-0.17	-0.25	-0.26	-0.22	-0.25	-0.34	-0.36	-0.37
60°	-0.02	-0.04	-0.08	-0.13	-0.19	-0.29	-0.31	-0.27	-0.29	-0.39	-0.42	-0.42
65°	-0.03	-0.05	-0.09	-0.15	-0.21	-0.33	-0.36	-0.33	-0.35	-0.43	-0.49	-0.48
70°	-0.04	-0.06	-0.10	-0.16	-0.24	-0.37	-0.42	-0.39	-0.41	-0.48	-0.55	-0.55
75°	-0.05	-0.07	-0.11	-0.18	-0.26	-0.41	-0.48	-0.44	-0.47	-0.53	-0.60	-0.63
80°	-0.06	-0.08	-0.13	-0.20	-0.29	-0.44	-0.54	-0.50	-0.53	-0.59	-0.65	-0.68
85°	-0.07	-0.10	-0.14	-0.21	-0.31	-0.48	-0.60	-0.57	-0.58	-0.64	-0.72	-0.74
90°	-0.07	-0.09	-0.15	-0.23	-0.33	-0.51	-0.65	-0.63	-0.66	-0.69	-0.77	-0.82
95°	-0.08	-0.11	-0.16	-0.23	-0.36	-0.53	-0.69	-0.69	-0.73	-0.76	-0.81	-0.90
100°	-0.08	-0.11	-0.16	-0.25	-0.37	-0.56	-0.72	-0.74	-0.78	-0.84	-0.88	-0.94
105°	-0.07	-0.11	-0.17	-0.25	-0.38	-0.58	-0.75	-0.78	-0.84	-0.90	-0.95	-0.99
110°	-0.09	-0.12	-0.17	-0.27	-0.38	-0.59	-0.78	-0.81	-0.87	-0.94	-1.01	-1.08
115°	-0.09	-0.12	-0.18	-0.27	-0.38	-0.59	-0.79	-0.84	-0.90	-0.97	-1.05	-1.14
120°	-0.10	-0.13	-0.18	-0.26	-0.38	-0.59	-0.79	-0.84	-0.92	-1.00	-1.07	-1.15
125°	-0.09	-0.12	-0.18	-0.25	-0.38	-0.58	-0.78	-0.83	-0.92	-1.01	-1.09	-1.17
130°	-0.09	-0.12	-0.18	-0.25	-0.37	-0.56	-0.77	-0.81	-0.90	-0.99	-1.08	-1.18
135°	-0.09	-0.12	-0.17	-0.24	-0.36	-0.54	-0.75	-0.78	-0.87	-0.96	-1.05	-1.17
140°	-0.08	-0.12	-0.17	-0.24	-0.35	-0.51	-0.72	-0.74	-0.83	-0.91	-1.00	-1.11
145°	-0.08	-0.11	-0.17	-0.23	-0.34	-0.49	-0.70	-0.71	-0.78	-0.85	-0.93	-1.04
150°	-0.08	-0.11	-0.16	-0.23	-0.33	-0.47	-0.67	-0.67	-0.72	-0.80	-0.87	-0.95
155°	-0.08	-0.11	-0.16	-0.21	-0.32	-0.46	-0.63	-0.64	-0.69	-0.74	-0.79	-0.87
160°	-0.08	-0.11	-0.16	-0.21	-0.32	-0.44	-0.60	-0.61	-0.65	-0.69	-0.73	-0.80
165°	-0.07	-0.11	-0.15	-0.20	-0.31	-0.44	-0.58	-0.58	-0.61	-0.64	-0.67	-0.72
170°	-0.07	-0.11	-0.15	-0.19	-0.31	-0.42	-0.56	-0.56	-0.59	-0.61	-0.63	-0.67
175°	-0.08	-0.11	-0.15	-0.20	-0.30	-0.42	-0.56	-0.55	-0.57	-0.59	-0.60	-0.64
180°	-0.09	-0.11	-0.14	-0.19	-0.30	-0.42	-0.55	-0.54	-0.56	-0.58	-0.59	-0.63
185°	-0.07	-0.09	-0.15	-0.21	-0.30	-0.42	-0.56	-0.55	-0.58	-0.59	-0.60	-0.64
190°	-0.08	-0.11	-0.15	-0.20	-0.31	-0.43	-0.57	-0.57	-0.59	-0.61	-0.63	-0.68
195°	-0.08	-0.11	-0.16	-0.22	-0.31	-0.43	-0.59	-0.59	-0.62	-0.64	-0.68	-0.73
200°	-0.08	-0.11	-0.16	-0.20	-0.32	-0.45	-0.62	-0.62	-0.66	-0.69	-0.73	-0.80
205°	-0.08	-0.12	-0.16	-0.22	-0.34	-0.47	-0.65	-0.65	-0.70	-0.74	-0.80	-0.87
210°	-0.08	-0.12	-0.16	-0.22	-0.35	-0.48	-0.68	-0.69	-0.74	-0.80	-0.87	-0.96
215°	-0.08	-0.12	-0.17	-0.23	-0.35	-0.51	-0.71	-0.73	-0.79	-0.85	-0.94	-1.05
220°	-0.10	-0.13	-0.17	-0.24	-0.36	-0.53	-0.73	-0.76	-0.83	-0.91	-1.00	-1.12
225°	-0.09	-0.13	-0.17	-0.25	-0.37	-0.55	-0.76	-0.79	-0.86	-0.96	-1.06	-1.18
230°	-0.09	-0.13	-0.18	-0.25	-0.38	-0.57	-0.78	-0.82	-0.90	-0.99	-1.09	-1.20
235°	-0.09	-0.13	-0.19	-0.25	-0.39	-0.59	-0.79	-0.84	-0.92	-1.02	-1.09	-1.19
240°	-0.10	-0.13	-0.18	-0.26	-0.39	-0.59	-0.80	-0.85	-0.92	-1.01	-1.07	-1.17
245°	-0.10	-0.13	-0.18	-0.26	-0.39	-0.60	-0.80	-0.84	-0.91	-0.98	-1.04	-1.15
250°	-0.09	-0.12	-0.17	-0.25	-0.39	-0.60	-0.79	-0.82	-0.88	-0.95	-1.02	-1.10
255°	-0.08	-0.12	-0.17	-0.25	-0.39	-0.58	-0.77	-0.80	-0.84	-0.92	-0.96	-0.99
260°	-0.07	-0.11	-0.16	-0.24	-0.38	-0.56	-0.74	-0.76	-0.81	-0.85	-0.86	-0.93
265°	-0.08	-0.11	-0.16	-0.23	-0.36	-0.54	-0.71	-0.72	-0.74	-0.76	-0.79	-0.89
270°	-0.07	-0.10	-0.15	-0.22	-0.34	-0.52	-0.67	-0.65	-0.66	-0.69	-0.75	-0.84
275°	-0.08	-0.10	-0.14	-0.20	-0.33	-0.49	-0.62	-0.58	-0.58	-0.63	-0.70	-0.78
280°	-0.06	-0.08	-0.13	-0.20	-0.29	-0.46	-0.56	-0.51	-0.52	-0.57	-0.64	-0.74
285°	-0.05	-0.08	-0.12	-0.17	-0.28	-0.42	-0.49	-0.44	-0.45	-0.52	-0.61	-0.69
290°	-0.04	-0.07	-0.11	-0.16	-0.25	-0.38	-0.43	-0.38	-0.39	-0.47	-0.57	-0.61
295°	-0.03	-0.05	-0.09	-0.15	-0.22	-0.34	-0.36	-0.32	-0.33	-0.43	-0.52	-0.53
300°	-0.03	-0.06	-0.08	-0.12	-0.20	-0.30	-0.31	-0.26	-0.29	-0.40	-0.46	-0.45
305°	-0.02	-0.04	-0.07	-0.10	-0.18	-0.26	-0.26	-0.21	-0.25	-0.37	-0.40	-0.37
310°	-0.01	-0.03	-0.06	-0.08	-0.15	-0.21	-0.21	-0.16	-0.23	-0.31	-0.33	-0.30
315°	-0.02	-0.04	-0.05	-0.06	-0.12	-0.17	-0.16	-0.13	-0.20	-0.27	-0.26	-0.24
320°	0.01	-0.01	-0.03	-0.05	-0.10	-0.13	-0.12	-0.10	-0.16	-0.22	-0.19	-0.19
325°	0.01	-0.01	-0.02	-0.04	-0.07	-0.11	-0.08	-0.07	-0.12	-0.18	-0.13	-0.14
330°	0.01	0.00	0.00	-0.02	-0.04	-0.07	-0.05	-0.06	-0.10	-0.13	-0.09	-0.09
335°	0.01	0.00	0.00	0.01	-0.03	-0.05	-0.02	-0.03	-0.06	-0.09	-0.05	-0.05
340°	0.01	0.00	0.00	0.00	-0.02	-0.03	0.00	-0.01	-0.04	-0.05	-0.02	-0.02
345°	0.01	0.01	0.00	0.02	0.00	-0.01	0.01	0.00	-0.02	-0.02	0.00	0.00
350°	0.00	-0.01	0.00	0.02	0.01	0.00	0.02	0.02	0.00	0.00	0.01	0.02
355°	0.01	0.00	0.00	0.03	0.01	0.01	0.02	0.02	0.00	0.00	0.03	0.03

Tabella A.32 Risposta direzionale per lo schermo antivento UA-1650, microfono 4191 e preamplificatore microfono ZC-0032, con preamplificatore collegato ad un cavo d'estensione, 4000 Hz – 10600 Hz

Angolo	Frequenza											
	4000 Hz	4500 Hz	5000 Hz	5600 Hz	6300 Hz	7100 Hz	8000 Hz	8500 Hz	9000 Hz	9500 Hz	10000 Hz	10600 Hz
0°	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.02	-0.01	-0.01	-0.01
5°	-0.02	-0.03	-0.02	-0.04	-0.01	-0.02	-0.04	-0.04	-0.04	-0.01	-0.01	-0.05
10°	-0.03	-0.06	-0.04	-0.08	-0.01	-0.04	-0.12	-0.11	-0.13	-0.03	-0.09	-0.12
15°	-0.05	-0.10	-0.07	-0.12	-0.02	-0.09	-0.24	-0.20	-0.26	-0.05	-0.19	-0.21
20°	-0.08	-0.18	-0.14	-0.19	-0.05	-0.16	-0.43	-0.37	-0.45	-0.14	-0.31	-0.36
25°	-0.10	-0.26	-0.25	-0.26	-0.09	-0.26	-0.62	-0.57	-0.65	-0.31	-0.43	-0.56
30°	-0.15	-0.35	-0.40	-0.34	-0.20	-0.38	-0.78	-0.85	-0.89	-0.63	-0.53	-0.85
35°	-0.19	-0.44	-0.57	-0.41	-0.33	-0.50	-0.91	-1.22	-1.14	-0.98	-0.66	-1.10
40°	-0.24	-0.52	-0.77	-0.49	-0.47	-0.58	-1.07	-1.50	-1.41	-1.35	-1.03	-1.31
45°	-0.30	-0.58	-0.98	-0.66	-0.65	-0.65	-1.17	-1.71	-1.86	-1.63	-1.50	-1.48
50°	-0.38	-0.66	-1.17	-0.90	-0.81	-0.81	-1.38	-1.84	-2.26	-1.95	-1.92	-1.96
55°	-0.47	-0.74	-1.28	-1.16	-0.93	-0.91	-1.62	-1.95	-2.54	-2.42	-2.11	-2.56
60°	-0.54	-0.85	-1.36	-1.48	-1.15	-1.10	-1.81	-2.23	-2.62	-2.88	-2.48	-2.93
65°	-0.61	-0.99	-1.47	-1.68	-1.45	-1.28	-1.90	-2.47	-2.90	-3.10	-2.93	-3.22
70°	-0.68	-1.11	-1.62	-1.74	-1.82	-1.51	-2.03	-2.58	-3.25	-3.42	-3.20	-3.63
75°	-0.72	-1.20	-1.83	-1.82	-2.13	-1.81	-2.33	-2.68	-3.38	-3.89	-3.53	-3.86
80°	-0.78	-1.27	-2.03	-1.95	-2.24	-2.18	-2.73	-3.05	-3.39	-4.05	-4.10	-4.04
85°	-0.85	-1.30	-2.17	-2.20	-2.32	-2.47	-2.97	-3.59	-3.77	-3.96	-4.35	-4.53
90°	-0.92	-1.37	-2.26	-2.43	-2.43	-2.67	-3.27	-3.85	-4.37	-4.29	-4.30	-4.83
95°	-1.00	-1.44	-2.30	-2.59	-2.66	-2.78	-3.46	-4.02	-4.67	-4.84	-4.68	-4.99
100°	-1.10	-1.54	-2.39	-2.70	-2.85	-2.91	-3.79	-4.26	-4.79	-5.10	-5.21	-5.38
105°	-1.16	-1.64	-2.49	-2.77	-2.98	-3.01	-3.96	-4.51	-5.08	-5.29	-5.50	-5.73
110°	-1.21	-1.71	-2.62	-2.88	-3.07	-3.10	-4.06	-4.69	-5.35	-5.61	-5.81	-6.08
115°	-1.30	-1.77	-2.72	-2.97	-3.18	-3.16	-4.12	-4.81	-5.61	-5.89	-6.06	-6.43
120°	-1.35	-1.85	-2.79	-3.04	-3.25	-3.24	-4.20	-4.97	-5.79	-6.16	-6.35	-6.56
125°	-1.36	-1.88	-2.86	-3.11	-3.28	-3.30	-4.30	-5.12	-6.01	-6.39	-6.49	-6.76
130°	-1.37	-1.89	-2.88	-3.14	-3.35	-3.35	-4.28	-5.16	-6.12	-6.46	-6.52	-6.93
135°	-1.37	-1.89	-2.88	-3.11	-3.34	-3.40	-4.22	-5.08	-6.05	-6.36	-6.41	-6.79
140°	-1.32	-1.86	-2.86	-3.11	-3.36	-3.46	-4.24	-5.02	-5.89	-6.20	-6.22	-6.55
145°	-1.24	-1.75	-2.76	-3.02	-3.33	-3.51	-4.30	-5.07	-5.89	-6.05	-6.12	-6.39
150°	-1.14	-1.62	-2.61	-2.86	-3.19	-3.43	-4.25	-5.03	-5.91	-6.01	-6.11	-6.44
155°	-1.03	-1.49	-2.45	-2.65	-2.98	-3.26	-4.06	-4.79	-5.65	-5.72	-5.93	-6.36
160°	-0.92	-1.36	-2.30	-2.46	-2.74	-3.01	-3.78	-4.42	-5.27	-5.31	-5.48	-5.99
165°	-0.84	-1.25	-2.17	-2.28	-2.55	-2.75	-3.47	-4.07	-4.86	-4.87	-5.01	-5.49
170°	-0.77	-1.15	-2.06	-2.14	-2.40	-2.54	-3.21	-3.77	-4.51	-4.52	-4.66	-5.07
175°	-0.74	-1.10	-1.99	-2.06	-2.30	-2.41	-3.05	-3.57	-4.28	-4.31	-4.42	-4.83
180°	-0.72	-1.08	-1.97	-2.04	-2.27	-2.37	-2.99	-3.50	-4.21	-4.26	-4.36	-4.78
185°	-0.74	-1.10	-2.00	-2.08	-2.31	-2.41	-3.06	-3.56	-4.29	-4.36	-4.50	-4.90
190°	-0.78	-1.16	-2.07	-2.18	-2.40	-2.53	-3.21	-3.75	-4.53	-4.61	-4.76	-5.13
195°	-0.86	-1.25	-2.19	-2.31	-2.53	-2.70	-3.42	-4.02	-4.88	-4.98	-5.10	-5.50
200°	-0.95	-1.37	-2.34	-2.47	-2.70	-2.93	-3.73	-4.40	-5.32	-5.43	-5.53	-5.91
205°	-1.05	-1.49	-2.50	-2.64	-2.92	-3.18	-4.04	-4.79	-5.71	-5.80	-5.85	-6.16
210°	-1.15	-1.63	-2.66	-2.82	-3.13	-3.36	-4.24	-5.04	-5.95	-6.03	-6.03	-6.31
215°	-1.25	-1.76	-2.80	-2.99	-3.27	-3.47	-4.30	-5.09	-5.99	-6.13	-6.16	-6.36
220°	-1.34	-1.85	-2.88	-3.08	-3.31	-3.49	-4.25	-5.06	-6.04	-6.34	-6.36	-6.51
225°	-1.39	-1.89	-2.90	-3.09	-3.34	-3.46	-4.23	-5.10	-6.21	-6.51	-6.45	-6.59
230°	-1.40	-1.89	-2.92	-3.14	-3.32	-3.38	-4.28	-5.10	-6.16	-6.51	-6.44	-6.70
235°	-1.37	-1.89	-2.91	-3.10	-3.22	-3.32	-4.23	-5.02	-6.04	-6.45	-6.36	-6.58
240°	-1.37	-1.87	-2.82	-3.01	-3.15	-3.26	-4.19	-4.89	-5.88	-6.29	-6.18	-6.31
245°	-1.33	-1.77	-2.73	-2.92	-3.08	-3.25	-4.12	-4.78	-5.71	-5.92	-5.81	-6.15
250°	-1.24	-1.69	-2.64	-2.83	-3.04	-3.23	-4.03	-4.63	-5.42	-5.61	-5.75	-6.04
255°	-1.16	-1.63	-2.53	-2.78	-2.97	-3.10	-3.87	-4.47	-5.23	-5.43	-5.59	-5.79
260°	-1.11	-1.53	-2.46	-2.74	-2.80	-2.94	-3.76	-4.33	-5.03	-5.23	-5.18	-5.33
265°	-1.03	-1.48	-2.40	-2.60	-2.57	-2.86	-3.53	-4.11	-4.80	-4.83	-4.67	-5.03
270°	-0.97	-1.43	-2.33	-2.38	-2.38	-2.83	-3.23	-3.80	-4.47	-4.37	-4.41	-4.88
275°	-0.93	-1.35	-2.20	-2.15	-2.32	-2.61	-2.84	-3.57	-3.99	-4.08	-4.40	-4.58
280°	-0.85	-1.28	-2.02	-1.96	-2.28	-2.22	-2.67	-3.19	-3.59	-4.05	-4.18	-4.22
285°	-0.77	-1.18	-1.83	-1.89	-2.11	-1.82	-2.41	-2.74	-3.45	-3.98	-3.72	-3.98
290°	-0.68	-1.09	-1.68	-1.80	-1.74	-1.58	-2.06	-2.53	-3.43	-3.64	-3.26	-3.67
295°	-0.60	-0.98	-1.56	-1.67	-1.36	-1.40	-1.82	-2.49	-3.22	-3.22	-2.86	-3.29
300°	-0.52	-0.89	-1.45	-1.41	-1.11	-1.19	-1.72	-2.42	-2.84	-2.89	-2.45	-2.96
305°	-0.45	-0.79	-1.33	-1.10	-0.94	-0.90	-1.70	-2.13	-2.57	-2.49	-2.06	-2.55
310°	-0.37	-0.72	-1.16	-0.86	-0.83	-0.75	-1.51	-1.87	-2.29	-2.05	-1.80	-2.06
315°	-0.32	-0.63	-0.95	-0.65	-0.66	-0.65	-1.23	-1.66	-1.99	-1.66	-1.42	-1.65
320°	-0.27	-0.54	-0.72	-0.49	-0.47	-0.64	-1.01	-1.46	-1.57	-1.31	-1.04	-1.44
325°	-0.21	-0.44	-0.52	-0.41	-0.30	-0.61	-0.82	-1.24	-1.24	-0.95	-0.71	-1.13
330°	-0.17	-0.34	-0.35	-0.33	-0.15	-0.49	-0.69	-0.92	-0.94	-0.64	-0.58	-0.79
335°	-0.12	-0.23	-0.22	-0.24	-0.06	-0.34	-0.57	-0.64	-0.66	-0.35	-0.43	-0.49
340°	-0.08	-0.14	-0.11	-0.16	-0.01	-0.23	-0.42	-0.42	-0.44	-0.18	-0.27	-0.30
345°	-0.06	-0.07	-0.03	-0.09	0.01	-0.12	-0.24	-0.24	-0.25	-0.09	-0.12	-0.19
350°	-0.03	-0.01	0.01	-0.03	0.03	-0.05	-0.12	-0.12	-0.09	-0.05	-0.01	-0.11
355°	-0.01	0.02	0.04	0.00	0.03	0.00	-0.02	-0.04	0.01	-0.02	0.07	-0.05

Tabella A.33 Risposta direzionale per lo schermo antivento UA-1650, microfono 4191 e preamplificatore microfono ZC-0032, con preamplificatore collegato ad un cavo d'estensione, 11200 Hz – 20000 Hz

Angolo	Frequenza										
	11200 Hz	11800 Hz	12500 Hz	13200 Hz	14000 Hz	15000 Hz	16000 Hz	17000 Hz	18000 Hz	19000 Hz	20000 Hz
0°	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02
5°	-0.06	-0.04	-0.04	-0.04	-0.08	-0.02	-0.04	-0.05	-0.07	-0.08	-0.06
10°	-0.21	-0.13	-0.10	-0.16	-0.23	-0.10	-0.09	-0.19	-0.24	-0.25	-0.27
15°	-0.42	-0.25	-0.21	-0.35	-0.43	-0.28	-0.18	-0.41	-0.55	-0.53	-0.59
20°	-0.70	-0.43	-0.43	-0.63	-0.65	-0.65	-0.43	-0.76	-0.96	-0.92	-0.99
25°	-1.02	-0.64	-0.71	-0.87	-0.92	-1.15	-0.86	-1.03	-1.34	-1.37	-1.41
30°	-1.31	-1.03	-1.11	-1.09	-1.25	-1.80	-1.25	-1.31	-1.69	-1.86	-1.93
35°	-1.53	-1.50	-1.43	-1.41	-1.74	-2.20	-1.77	-1.65	-2.19	-2.49	-2.60
40°	-1.84	-2.03	-1.74	-1.91	-2.06	-2.53	-2.46	-2.37	-2.62	-2.82	-3.12
45°	-2.14	-2.34	-2.23	-2.38	-2.35	-3.07	-3.05	-3.07	-2.83	-3.21	-3.81
50°	-2.39	-2.69	-2.89	-2.72	-2.90	-3.56	-3.32	-3.83	-3.77	-3.86	-4.54
55°	-2.63	-3.11	-3.25	-3.38	-3.39	-3.95	-4.06	-4.60	-4.62	-4.45	-5.36
60°	-3.24	-3.51	-3.66	-4.08	-3.85	-4.64	-4.68	-5.14	-5.48	-5.82	-6.14
65°	-3.88	-3.91	-4.47	-4.34	-4.81	-5.01	-5.20	-6.04	-6.12	-6.51	-7.21
70°	-4.22	-4.44	-5.04	-5.14	-5.27	-5.69	-5.86	-6.32	-7.06	-7.52	-8.01
75°	-4.60	-4.78	-5.54	-5.77	-6.06	-6.29	-6.47	-7.14	-7.71	-8.17	-9.12
80°	-4.94	-5.10	-5.82	-6.27	-6.65	-7.35	-7.24	-7.89	-8.62	-8.79	-9.90
85°	-5.04	-5.70	-5.89	-6.82	-7.03	-8.23	-8.17	-9.05	-8.78	-9.87	-10.39
90°	-5.31	-5.96	-6.70	-6.81	-7.77	-8.34	-9.10	-9.51	-10.10	-9.95	-11.22
95°	-5.65	-5.99	-7.18	-7.73	-7.87	-8.87	-9.03	-10.10	-10.44	-11.28	-12.85
100°	-6.06	-6.44	-7.18	-8.18	-8.65	-9.23	-9.48	-9.95	-11.05	-12.14	-13.90
105°	-6.31	-6.95	-7.76	-8.23	-8.78	-9.71	-9.81	-10.61	-11.37	-12.58	-13.67
110°	-6.57	-7.00	-7.93	-8.76	-9.27	-9.88	-10.13	-11.40	-12.22	-13.01	-13.63
115°	-7.02	-7.27	-7.93	-8.65	-9.67	-10.57	-10.67	-11.68	-12.32	-13.49	-14.31
120°	-7.18	-7.57	-8.42	-9.06	-9.73	-10.49	-10.75	-12.12	-13.26	-13.70	-14.64
125°	-7.29	-7.62	-8.53	-9.40	-10.13	-10.77	-10.43	-11.89	-13.20	-14.04	-15.27
130°	-7.62	-7.96	-8.86	-9.69	-9.92	-10.66	-10.65	-12.33	-13.25	-13.61	-14.93
135°	-7.67	-8.29	-9.65	-10.53	-10.24	-10.83	-11.28	-12.83	-12.85	-13.60	-14.95
140°	-7.48	-8.15	-9.64	-10.46	-10.45	-11.60	-12.49	-14.11	-13.20	-13.43	-15.77
145°	-7.32	-8.00	-9.16	-9.74	-9.98	-11.28	-12.30	-13.95	-13.71	-14.52	-17.73
150°	-7.41	-8.12	-8.86	-9.23	-9.57	-11.01	-11.93	-12.43	-12.89	-14.35	-17.24
155°	-7.37	-8.22	-8.89	-9.14	-9.49	-11.25	-12.05	-11.98	-12.35	-14.25	-15.84
160°	-7.08	-7.87	-8.45	-8.74	-9.33	-11.11	-11.96	-12.01	-12.59	-14.74	-15.44
165°	-6.58	-7.27	-7.74	-8.07	-8.71	-10.44	-10.99	-11.18	-12.10	-14.39	-14.68
170°	-6.07	-6.72	-7.03	-7.34	-8.01	-9.59	-10.03	-10.14	-11.13	-13.38	-13.51
175°	-5.78	-6.37	-6.67	-6.92	-7.57	-8.94	-9.44	-9.44	-10.26	-12.51	-12.49
180°	-5.72	-6.26	-6.52	-6.79	-7.43	-8.78	-9.27	-9.26	-9.96	-12.23	-12.18
185°	-5.83	-6.40	-6.66	-6.91	-7.61	-9.01	-9.60	-9.45	-10.12	-12.58	-12.68
190°	-6.08	-6.69	-6.90	-7.23	-8.01	-9.55	-10.08	-9.87	-10.82	-13.43	-13.51
195°	-6.49	-7.17	-7.55	-8.00	-8.68	-10.24	-10.92	-10.86	-11.68	-14.39	-14.51
200°	-6.92	-7.72	-8.25	-8.62	-9.11	-10.67	-11.72	-11.64	-12.01	-14.73	-15.41
205°	-7.19	-8.15	-8.72	-8.98	-9.27	-10.90	-11.97	-11.87	-12.00	-14.37	-16.09
210°	-7.31	-8.15	-8.76	-9.16	-9.49	-10.75	-12.22	-12.65	-12.68	-14.17	-17.46
215°	-7.17	-8.12	-9.14	-9.84	-9.92	-10.88	-12.68	-13.65	-12.94	-13.93	-17.62
220°	-7.23	-8.23	-9.44	-10.35	-10.21	-10.91	-12.43	-13.90	-13.17	-13.55	-16.44
225°	-7.34	-8.17	-9.28	-10.44	-10.35	-10.51	-11.62	-12.91	-12.65	-13.39	-15.00
230°	-7.39	-7.88	-8.82	-9.91	-9.96	-10.29	-11.21	-11.82	-12.80	-13.69	-15.45
235°	-7.16	-7.58	-8.40	-9.28	-9.80	-10.39	-10.84	-11.86	-13.22	-13.80	-15.88
240°	-6.89	-7.37	-8.07	-9.14	-9.76	-10.43	-11.03	-11.90	-12.79	-13.00	-15.21
245°	-6.77	-7.38	-8.06	-8.99	-9.51	-10.16	-10.68	-11.62	-12.31	-12.89	-14.24
250°	-6.62	-7.30	-7.93	-8.78	-9.08	-9.61	-10.15	-11.42	-12.13	-12.40	-13.82
255°	-6.31	-6.95	-7.61	-8.51	-8.77	-9.44	-9.68	-10.59	-11.66	-12.43	-13.70
260°	-5.98	-6.49	-7.26	-8.36	-8.49	-9.02	-9.58	-9.96	-10.93	-11.92	-14.31
265°	-5.69	-6.07	-7.06	-7.88	-7.91	-8.94	-9.11	-9.85	-10.48	-11.19	-13.16
270°	-5.34	-5.92	-6.69	-7.07	-7.76	-8.23	-9.29	-9.55	-10.18	-9.78	-11.40
275°	-5.11	-5.74	-5.94	-6.91	-6.99	-8.00	-8.38	-8.98	-9.00	-9.63	-10.53
280°	-4.98	-5.11	-5.73	-6.41	-6.54	-7.48	-7.14	-8.00	-8.66	-8.65	-10.01
285°	-4.53	-4.74	-5.53	-5.86	-6.16	-6.25	-6.63	-7.03	-7.78	-8.02	-9.39
290°	-4.13	-4.45	-4.99	-5.38	-5.19	-5.81	-5.89	-6.31	-7.10	-7.46	-8.07
295°	-3.80	-3.90	-4.59	-4.40	-4.80	-5.08	-5.32	-5.91	-6.17	-6.64	-7.51
300°	-3.21	-3.59	-3.75	-4.02	-3.95	-4.65	-4.63	-5.25	-5.56	-5.94	-6.22
305°	-2.76	-3.18	-3.13	-3.58	-3.29	-4.11	-4.07	-4.61	-4.71	-4.59	-5.54
310°	-2.53	-2.58	-2.90	-2.80	-2.92	-3.66	-3.30	-3.87	-3.91	-3.87	-4.60
315°	-2.10	-2.24	-2.32	-2.37	-2.43	-3.22	-3.00	-3.10	-2.91	-3.35	-3.97
320°	-1.65	-2.09	-1.67	-2.02	-2.04	-2.68	-2.55	-2.43	-2.64	-2.85	-3.25
325°	-1.38	-1.61	-1.30	-1.56	-1.72	-2.29	-1.89	-1.65	-2.31	-2.57	-2.73
330°	-1.28	-1.04	-1.08	-1.13	-1.30	-1.87	-1.34	-1.25	-1.74	-1.94	-2.04
335°	-1.08	-0.58	-0.76	-0.85	-0.97	-1.23	-0.91	-1.05	-1.32	-1.37	-1.47
340°	-0.77	-0.33	-0.47	-0.62	-0.69	-0.73	-0.44	-0.79	-0.98	-0.91	-1.04
345°	-0.47	-0.18	-0.23	-0.35	-0.44	-0.38	-0.18	-0.44	-0.60	-0.52	-0.63
350°	-0.22	-0.06	-0.08	-0.16	-0.22	-0.16	-0.05	-0.16	-0.27	-0.24	-0.26
355°	-0.06	0.02	-0.01	-0.03	-0.04	-0.06	0.01	-0.01	-0.08	-0.06	-0.04

Tabella A.34 Variazioni della sensibilità per lo schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032, con preamplificatore collegato ad un cavo d'estensione, agli angoli d'incidenza sonora compresi tra $\pm\theta^\circ$ dalla direzione di riferimento

Frequenza nominale	Frequenza esatta	Variaz. max $\pm 30^\circ$ dB	Variaz. max $\pm 90^\circ$ dB	Variaz. max $\pm 150^\circ$ dB
500 Hz	501.187 Hz	0.03	0.27	0.31
630 Hz	630.957 Hz	0.03	0.33	0.39
800 Hz	794.328 Hz	0.01	0.15	0.19
1000 Hz	1000 Hz	0.06	0.25	0.30
1250 Hz	1258.93 Hz	0.07	0.35	0.40
1600 Hz	1584.89 Hz	0.09	0.52	0.61
2000 Hz	1995.26 Hz	0.09	0.69	0.83
2240 Hz	2238.72 Hz	0.08	0.68	0.87
2500 Hz	2511.89 Hz	0.11	0.67	0.94
2800 Hz	2818.38 Hz	0.15	0.70	1.03
3150 Hz	3162.28 Hz	0.14	0.79	1.12
3550 Hz	3548.13 Hz	0.14	0.87	1.23
4000 Hz	3981.07 Hz	0.18	0.98	1.41
4500 Hz	4466.84 Hz	0.38	1.45	1.92
5000 Hz	5011.87 Hz	0.44	2.37	2.95
5600 Hz	5623.41 Hz	0.36	2.44	3.15
6300 Hz	6309.57 Hz	0.23	2.47	3.39
7100 Hz	7079.46 Hz	0.50	2.84	3.53
8000 Hz	7943.28 Hz	0.80	3.28	4.32
8500 Hz	8413.95 Hz	0.94	3.87	5.18
9000 Hz	8912.51 Hz	0.96	4.49	6.23
9500 Hz	9440.61 Hz	0.66	4.38	6.53
10000 Hz	10000 Hz	0.65	4.48	6.60
10600 Hz	10592.5 Hz	0.86	4.89	6.95
11200 Hz	11220.2 Hz	1.33	5.35	7.69
11800 Hz	11885.0 Hz	1.07	5.98	8.31
12500 Hz	12589.3 Hz	1.13	6.72	9.66
13200 Hz	13335.2 Hz	1.15	7.09	10.54
14000 Hz	14125.4 Hz	1.31	7.79	10.47
15000 Hz	14962.4 Hz	1.88	8.35	11.61
16000 Hz	15848.9 Hz	1.35	9.30	12.69
17000 Hz	16788.0 Hz	1.33	9.57	14.12
18000 Hz	17782.8 Hz	1.75	10.19	13.72
19000 Hz	18836.5 Hz	1.95	9.96	14.54
20000 Hz	19952.6 Hz	2.05	11.42	17.74

Tabella A.35 Risposta direzionale per lo schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurata in un piano parallelo al display e lungo l'asse del microfono, 500 Hz – 3550 Hz

Angolo	Frequenza											
	500 Hz	630 Hz	800 Hz	1000 Hz	1250 Hz	1600 Hz	2000 Hz	2240 Hz	2500 Hz	2800 Hz	3150 Hz	3550 Hz
0°	0.00	0.00	-0.01	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
5°	0.01	0.01	-0.01	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	-0.01
10°	0.00	0.00	-0.01	0.01	-0.03	-0.01	-0.03	0.00	-0.03	0.00	-0.03	-0.02
15°	0.02	0.00	-0.01	0.02	-0.04	-0.02	-0.06	0.00	-0.07	0.00	-0.07	-0.02
20°	0.02	0.01	-0.01	0.02	-0.06	-0.02	-0.10	0.01	-0.11	0.00	-0.13	-0.02
25°	0.01	0.00	-0.01	0.04	-0.09	-0.05	-0.15	0.00	-0.14	-0.02	-0.19	-0.02
30°	0.02	0.02	-0.02	0.05	-0.11	-0.08	-0.21	-0.02	-0.16	-0.06	-0.25	-0.04
35°	0.01	0.01	-0.02	0.07	-0.11	-0.15	-0.25	-0.09	-0.14	-0.14	-0.26	-0.09
40°	0.04	0.05	-0.03	0.07	-0.10	-0.24	-0.26	-0.18	-0.11	-0.24	-0.27	-0.17
45°	0.03	0.06	-0.03	0.05	-0.07	-0.36	-0.26	-0.29	-0.10	-0.33	-0.30	-0.24
50°	0.03	0.07	-0.01	0.05	-0.04	-0.47	-0.24	-0.38	-0.17	-0.37	-0.37	-0.28
55°	0.00	0.07	0.02	0.03	0.00	-0.55	-0.24	-0.40	-0.33	-0.33	-0.50	-0.32
60°	-0.01	0.07	0.05	0.02	0.01	-0.57	-0.32	-0.36	-0.51	-0.32	-0.61	-0.39
65°	-0.04	0.06	0.08	0.04	0.01	-0.52	-0.50	-0.32	-0.61	-0.46	-0.63	-0.50
70°	-0.06	0.04	0.10	0.07	-0.02	-0.44	-0.71	-0.40	-0.55	-0.70	-0.63	-0.59
75°	-0.09	0.00	0.11	0.10	-0.05	-0.36	-0.86	-0.62	-0.46	-0.84	-0.78	-0.64
80°	-0.10	-0.02	0.12	0.16	-0.07	-0.32	-0.85	-0.88	-0.55	-0.77	-1.04	-0.72
85°	-0.13	-0.06	0.11	0.20	-0.07	-0.33	-0.70	-0.99	-0.84	-0.71	-1.11	-0.97
90°	-0.17	-0.11	0.07	0.25	-0.02	-0.38	-0.52	-0.84	-1.09	-0.90	-1.00	-1.20
95°	-0.20	-0.16	0.03	0.27	0.05	-0.43	-0.43	-0.59	-1.02	-1.21	-1.06	-1.15
100°	-0.24	-0.21	-0.04	0.25	0.14	-0.44	-0.47	-0.43	-0.67	-1.24	-1.37	-1.11
105°	-0.27	-0.26	-0.12	0.20	0.20	-0.37	-0.57	-0.47	-0.41	-0.84	-1.45	-1.33
110°	-0.28	-0.31	-0.20	0.11	0.20	-0.28	-0.61	-0.47	-0.43	-0.47	-1.03	-1.37
115°	-0.30	-0.35	-0.29	0.00	0.14	-0.22	-0.52	-0.68	-0.64	-0.47	-0.58	-0.89
120°	-0.31	-0.37	-0.36	-0.12	0.03	-0.24	-0.38	-0.56	-0.76	-0.75	-0.61	-0.44
125°	-0.31	-0.38	-0.41	-0.23	-0.12	-0.36	-0.30	-0.38	-0.62	-0.88	-0.95	-0.58
130°	-0.30	-0.38	-0.44	-0.32	-0.27	-0.56	-0.39	-0.31	-0.40	-0.70	-1.05	-1.00
135°	-0.29	-0.35	-0.44	-0.37	-0.39	-0.77	-0.64	-0.46	-0.37	-0.50	-0.79	-1.00
140°	-0.27	-0.34	-0.41	-0.38	-0.45	-0.93	-0.97	-0.81	-0.63	-0.59	-0.65	-0.69
145°	-0.26	-0.31	-0.38	-0.36	-0.44	-0.99	-1.23	-1.17	-1.06	-1.00	-0.93	-0.70
150°	-0.23	-0.27	-0.33	-0.31	-0.38	-0.93	-1.32	-1.38	-1.41	-1.47	-1.49	-1.20
155°	-0.22	-0.25	-0.29	-0.23	-0.29	-0.80	-1.23	-1.34	-1.48	-1.69	-1.91	-1.79
160°	-0.20	-0.21	-0.24	-0.16	-0.19	-0.64	-1.02	-1.12	-1.28	-1.53	-1.88	-1.94
165°	-0.19	-0.19	-0.20	-0.10	-0.10	-0.48	-0.79	-0.83	-0.95	-1.16	-1.49	-1.57
170°	-0.17	-0.18	-0.17	-0.05	-0.03	-0.36	-0.59	-0.59	-0.65	-0.79	-1.03	-1.05
175°	-0.18	-0.17	-0.15	-0.02	0.02	-0.28	-0.46	-0.43	-0.45	-0.53	-0.71	-0.66
180°	-0.16	-0.16	-0.15	0.00	0.03	-0.26	-0.42	-0.37	-0.38	-0.44	-0.59	-0.51
185°	-0.17	-0.16	-0.15	-0.02	0.02	-0.29	-0.46	-0.42	-0.44	-0.52	-0.69	-0.64
190°	-0.18	-0.18	-0.17	-0.05	-0.03	-0.37	-0.57	-0.57	-0.63	-0.76	-0.99	-1.02
195°	-0.19	-0.20	-0.21	-0.09	-0.10	-0.49	-0.75	-0.80	-0.92	-1.12	-1.44	-1.55
200°	-0.22	-0.24	-0.24	-0.14	-0.20	-0.64	-0.98	-1.08	-1.25	-1.48	-1.85	-1.95
205°	-0.23	-0.26	-0.29	-0.21	-0.30	-0.80	-1.18	-1.30	-1.46	-1.66	-1.93	-1.85
210°	-0.24	-0.28	-0.33	-0.27	-0.40	-0.92	-1.28	-1.36	-1.41	-1.47	-1.55	-1.27
215°	-0.26	-0.31	-0.38	-0.33	-0.47	-0.97	-1.21	-1.18	-1.08	-1.03	-0.99	-0.74
220°	-0.28	-0.34	-0.41	-0.36	-0.48	-0.91	-0.96	-0.83	-0.65	-0.63	-0.68	-0.68
225°	-0.30	-0.37	-0.42	-0.35	-0.43	-0.74	-0.65	-0.48	-0.38	-0.52	-0.77	-0.97
230°	-0.30	-0.38	-0.42	-0.30	-0.31	-0.53	-0.40	-0.31	-0.40	-0.70	-1.03	-1.02
235°	-0.33	-0.39	-0.39	-0.22	-0.16	-0.33	-0.31	-0.37	-0.62	-0.88	-0.97	-0.62
240°	-0.32	-0.37	-0.33	-0.12	0.00	-0.20	-0.38	-0.56	-0.78	-0.77	-0.66	-0.44
245°	-0.30	-0.34	-0.27	0.00	0.12	-0.18	-0.54	-0.69	-0.69	-0.51	-0.61	-0.85
250°	-0.30	-0.31	-0.18	0.10	0.20	-0.25	-0.63	-0.64	-0.48	-0.48	-1.01	-1.37
255°	-0.25	-0.24	-0.10	0.18	0.20	-0.35	-0.61	-0.50	-0.43	-0.82	-1.45	-1.35
260°	-0.23	-0.19	-0.01	0.24	0.15	-0.43	-0.50	-0.45	-0.65	-1.23	-1.37	-1.12
265°	-0.21	-0.15	0.04	0.25	0.07	-0.44	-0.45	-0.57	-1.00	-1.23	-1.06	-1.12
270°	-0.16	-0.08	0.09	0.24	0.00	-0.40	-0.51	-0.82	-1.11	-0.89	-1.00	-1.19
275°	-0.14	-0.04	0.11	0.20	-0.05	-0.35	-0.67	-0.98	-0.87	-0.69	-1.11	-0.98
280°	-0.11	-0.01	0.12	0.15	-0.06	-0.34	-0.82	-0.90	-0.55	-0.75	-1.05	-0.70
285°	-0.09	0.01	0.11	0.11	-0.04	-0.37	-0.84	-0.65	-0.44	-0.83	-0.78	-0.63
290°	-0.06	0.04	0.10	0.07	-0.02	-0.44	-0.72	-0.42	-0.52	-0.70	-0.60	-0.62
295°	-0.02	0.07	0.07	0.04	0.00	-0.52	-0.51	-0.33	-0.59	-0.45	-0.61	-0.52
300°	-0.01	0.08	0.05	0.03	0.01	-0.56	-0.33	-0.35	-0.49	-0.30	-0.61	-0.38
305°	0.00	0.07	0.02	0.04	0.00	-0.54	-0.25	-0.40	-0.29	-0.31	-0.51	-0.30
310°	0.02	0.06	-0.01	0.05	-0.04	-0.46	-0.24	-0.38	-0.12	-0.37	-0.37	-0.29
315°	0.02	0.05	-0.03	0.07	-0.07	-0.35	-0.26	-0.29	-0.05	-0.35	-0.27	-0.25
320°	0.05	0.05	-0.04	0.07	-0.10	-0.23	-0.27	-0.16	-0.07	-0.26	-0.24	-0.16
325°	0.03	0.02	-0.03	0.07	-0.11	-0.14	-0.25	-0.06	-0.12	-0.14	-0.25	-0.05
330°	0.02	0.01	-0.01	0.07	-0.10	-0.07	-0.20	0.02	-0.14	-0.04	-0.24	0.01
335°	0.03	0.01	-0.01	0.06	-0.09	-0.03	-0.14	0.04	-0.14	0.01	-0.19	0.03
340°	0.02	0.02	0.00	0.03	-0.06	-0.01	-0.08	0.05	-0.10	0.03	-0.13	0.03
345°	0.01	0.00	0.00	0.02	-0.04	0.00	-0.04	0.04	-0.06	0.03	-0.07	0.02
350°	0.01	0.00	0.00	0.01	-0.01	0.01	-0.01	0.03	-0.02	0.03	-0.02	0.02
355°	0.02	0.02	0.00	0.01	0.00	0.01	0.01	0.02	0.00	0.02	0.01	0.02

Tabella A.36 Risposta direzionale per lo schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurata in un piano parallelo al display e lungo l'asse del microfono, 4000 Hz – 10600 Hz

Angolo	Frequenza											
	4000 Hz	4500 Hz	5000 Hz	5600 Hz	6300 Hz	7100 Hz	8000 Hz	8500 Hz	9000 Hz	9500 Hz	10000 Hz	10600 Hz
0°	-0.01	-0.02	-0.02	-0.02	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.01	-0.02
5°	-0.01	-0.02	-0.03	-0.03	-0.01	-0.03	-0.04	-0.04	-0.05	-0.06	-0.06	-0.04
10°	-0.01	-0.05	-0.09	-0.08	0.01	-0.06	-0.12	-0.14	-0.18	-0.18	-0.19	-0.12
15°	-0.03	-0.11	-0.21	-0.21	-0.02	-0.06	-0.29	-0.32	-0.36	-0.33	-0.32	-0.20
20°	-0.07	-0.22	-0.35	-0.42	-0.16	-0.03	-0.52	-0.53	-0.46	-0.45	-0.34	-0.27
25°	-0.14	-0.34	-0.42	-0.61	-0.39	-0.04	-0.65	-0.66	-0.50	-0.54	-0.29	-0.37
30°	-0.23	-0.41	-0.35	-0.63	-0.56	-0.22	-0.65	-0.85	-0.79	-0.90	-0.53	-0.79
35°	-0.27	-0.42	-0.29	-0.57	-0.49	-0.35	-0.82	-1.20	-1.24	-1.16	-0.92	-1.15
40°	-0.28	-0.48	-0.49	-0.82	-0.58	-0.31	-1.20	-1.38	-1.40	-1.21	-1.18	-1.18
45°	-0.32	-0.67	-0.79	-1.24	-1.01	-0.57	-1.31	-1.52	-1.74	-1.82	-1.67	-1.71
50°	-0.45	-0.80	-0.78	-1.15	-0.96	-0.94	-1.43	-1.94	-1.99	-2.06	-1.73	-2.07
55°	-0.57	-0.76	-0.79	-1.18	-1.07	-0.94	-1.61	-2.02	-2.29	-2.45	-2.38	-2.22
60°	-0.59	-0.85	-1.19	-1.62	-1.61	-1.39	-1.88	-2.29	-2.64	-2.59	-2.73	-2.81
65°	-0.59	-1.11	-1.28	-1.50	-1.46	-1.23	-2.12	-2.51	-2.82	-3.23	-2.79	-3.17
70°	-0.71	-1.13	-1.26	-1.85	-1.84	-1.83	-2.31	-2.92	-3.11	-3.33	-3.48	-3.26
75°	-0.85	-1.11	-1.63	-2.08	-1.77	-1.68	-2.43	-3.08	-3.69	-3.68	-3.77	-3.89
80°	-0.90	-1.28	-1.54	-2.07	-2.20	-2.16	-2.92	-3.17	-3.82	-4.32	-3.98	-4.45
85°	-1.01	-1.40	-1.64	-2.52	-2.28	-2.04	-2.83	-3.64	-3.79	-4.55	-4.62	-4.54
90°	-1.25	-1.49	-1.86	-2.19	-2.58	-2.56	-3.37	-3.57	-4.36	-4.44	-4.78	-4.90
95°	-1.53	-1.81	-1.91	-2.71	-2.45	-2.55	-3.53	-3.99	-4.41	-4.77	-4.93	-4.92
100°	-1.58	-2.14	-2.34	-2.61	-2.76	-2.64	-3.66	-4.32	-4.63	-5.12	-5.04	-5.57
105°	-1.55	-2.23	-2.72	-3.21	-2.83	-2.65	-3.87	-4.28	-4.95	-5.52	-5.32	-5.93
110°	-1.66	-2.20	-2.89	-3.61	-3.36	-2.80	-3.70	-4.22	-4.86	-5.36	-5.94	-5.95
115°	-1.59	-2.22	-2.86	-3.78	-3.94	-3.55	-4.27	-4.73	-5.06	-5.33	-5.52	-5.73
120°	-1.02	-1.96	-2.61	-3.77	-3.94	-4.03	-5.15	-5.37	-5.96	-6.38	-5.87	-5.83
125°	-0.62	-1.36	-2.27	-3.10	-3.78	-3.92	-5.25	-6.45	-7.02	-7.34	-7.37	-7.40
130°	-0.93	-1.15	-1.69	-2.77	-2.77	-3.09	-5.12	-5.79	-6.77	-7.62	-8.07	-8.18
135°	-1.40	-1.64	-1.71	-2.25	-2.56	-2.23	-3.43	-4.77	-5.99	-6.92	-6.98	-7.26
140°	-1.22	-1.95	-2.39	-2.68	-2.41	-2.28	-3.24	-3.67	-4.31	-5.01	-5.43	-6.16
145°	-0.92	-1.60	-2.39	-3.32	-3.11	-2.62	-3.48	-4.21	-4.68	-4.94	-4.90	-4.92
150°	-1.21	-1.57	-2.02	-2.93	-3.33	-3.32	-4.17	-4.71	-5.21	-5.39	-5.27	-5.80
155°	-1.92	-2.21	-2.39	-2.92	-3.03	-3.05	-4.36	-5.12	-5.80	-6.27	-6.13	-6.20
160°	-2.32	-2.85	-3.23	-3.76	-3.67	-3.44	-4.23	-4.83	-5.36	-5.81	-6.09	-6.58
165°	-2.02	-2.70	-3.37	-4.24	-4.35	-4.42	-5.28	-5.71	-6.18	-6.37	-6.33	-6.72
170°	-1.41	-2.01	-2.66	-3.56	-3.74	-3.96	-5.27	-5.91	-6.58	-7.03	-7.33	-7.87
175°	-0.92	-1.41	-1.92	-2.68	-2.72	-2.73	-3.87	-4.45	-5.00	-5.47	-5.85	-6.41
180°	-0.74	-1.19	-1.65	-2.34	-2.31	-2.19	-3.18	-3.71	-4.15	-4.53	-4.81	-5.26
185°	-0.91	-1.39	-1.89	-2.66	-2.68	-2.66	-3.76	-4.36	-4.90	-5.35	-5.73	-6.27
190°	-1.39	-1.98	-2.60	-3.51	-3.67	-3.83	-5.10	-5.79	-6.48	-6.93	-7.25	-7.80
195°	-2.02	-2.69	-3.33	-4.24	-4.33	-4.38	-5.24	-5.73	-6.20	-6.40	-6.36	-6.79
200°	-2.35	-2.90	-3.29	-3.85	-3.74	-3.51	-4.27	-4.84	-5.34	-5.82	-6.12	-6.60
205°	-1.99	-2.30	-2.48	-2.99	-3.08	-3.10	-4.39	-5.17	-5.82	-6.29	-6.21	-6.20
210°	-1.28	-1.63	-2.05	-2.95	-3.31	-3.32	-4.22	-4.72	-5.27	-5.42	-5.22	-5.79
215°	-0.93	-1.59	-2.38	-3.35	-3.12	-2.67	-3.52	-4.28	-4.81	-5.09	-5.04	-4.96
220°	-1.17	-1.94	-2.41	-2.74	-2.46	-2.34	-3.30	-3.76	-4.33	-4.94	-5.29	-6.02
225°	-1.38	-1.71	-1.73	-2.31	-2.56	-2.22	-3.34	-4.60	-5.90	-6.85	-7.03	-7.10
230°	-0.97	-1.18	-1.68	-2.79	-2.77	-3.03	-5.04	-5.82	-6.78	-7.61	-8.06	-8.19
235°	-0.63	-1.34	-2.26	-3.10	-3.69	-3.90	-5.19	-6.44	-7.09	-7.51	-7.45	-7.49
240°	-1.01	-1.94	-2.60	-3.72	-4.01	-3.97	-5.25	-5.46	-6.02	-6.43	-5.99	-5.84
245°	-1.60	-2.18	-2.82	-3.85	-3.97	-3.63	-4.18	-4.79	-5.12	-5.38	-5.53	-5.71
250°	-1.64	-2.18	-2.95	-3.62	-3.51	-2.84	-3.75	-4.23	-4.80	-5.42	-5.93	-5.89
255°	-1.50	-2.25	-2.79	-3.30	-2.89	-2.71	-3.79	-4.30	-4.95	-5.61	-5.30	-5.84
260°	-1.55	-2.21	-2.38	-2.64	-2.78	-2.58	-3.69	-4.34	-4.70	-5.13	-5.04	-5.56
265°	-1.58	-1.83	-1.92	-2.72	-2.43	-2.59	-3.57	-3.98	-4.39	-4.74	-5.02	-4.90
270°	-1.29	-1.51	-1.89	-2.24	-2.61	-2.52	-3.27	-3.55	-4.37	-4.51	-4.83	-4.92
275°	-1.01	-1.41	-1.67	-2.51	-2.29	-2.05	-2.82	-3.66	-3.84	-4.61	-4.64	-4.56
280°	-0.91	-1.28	-1.56	-2.12	-2.21	-2.10	-2.92	-3.24	-3.87	-4.32	-3.99	-4.49
285°	-0.86	-1.12	-1.64	-2.06	-1.76	-1.70	-2.43	-3.08	-3.71	-3.71	-3.81	-3.88
290°	-0.70	-1.13	-1.26	-1.87	-1.81	-1.83	-2.31	-2.96	-3.16	-3.43	-3.53	-3.22
295°	-0.59	-1.09	-1.25	-1.45	-1.45	-1.21	-2.12	-2.56	-2.89	-3.32	-2.79	-3.17
300°	-0.61	-0.83	-1.14	-1.60	-1.62	-1.36	-1.85	-2.31	-2.66	-2.61	-2.73	-2.84
305°	-0.56	-0.74	-0.81	-1.14	-1.11	-0.89	-1.67	-2.03	-2.30	-2.50	-2.40	-2.22
310°	-0.43	-0.78	-0.76	-1.13	-0.96	-0.90	-1.41	-2.00	-2.02	-2.05	-1.79	-2.06
315°	-0.31	-0.63	-0.75	-1.26	-1.01	-0.58	-1.32	-1.53	-1.76	-1.82	-1.70	-1.71
320°	-0.27	-0.46	-0.46	-0.83	-0.57	-0.31	-1.21	-1.36	-1.45	-1.25	-1.18	-1.21
325°	-0.27	-0.40	-0.27	-0.54	-0.46	-0.37	-0.84	-1.20	-1.23	-1.15	-0.94	-1.15
330°	-0.21	-0.39	-0.33	-0.61	-0.52	-0.19	-0.64	-0.86	-0.78	-0.90	-0.52	-0.80
335°	-0.12	-0.32	-0.38	-0.63	-0.36	0.00	-0.63	-0.67	-0.50	-0.54	-0.27	-0.36
340°	-0.04	-0.20	-0.30	-0.43	-0.11	0.01	-0.50	-0.54	-0.42	-0.42	-0.32	-0.23
345°	0.00	-0.10	-0.16	-0.19	0.03	-0.02	-0.26	-0.34	-0.31	-0.31	-0.30	-0.18
350°	0.01	-0.03	-0.05	-0.06	0.05	-0.03	-0.09	-0.14	-0.15	-0.16	-0.17	-0.10
355°	0.02	0.00	0.00	0.01	0.03	0.00	0.00	-0.02	-0.03	-0.03	-0.03	-0.02

Tabella A.37 Risposta direzionale per lo schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurata in un piano parallelo al display e lungo l'asse del microfono, 11200 Hz – 20000 Hz

Angolo	Frequenza										
	11200 Hz	11800 Hz	12500 Hz	13200 Hz	14000 Hz	15000 Hz	16000 Hz	17000 Hz	18000 Hz	19000 Hz	20000 Hz
0°	-0.02	-0.01	-0.01	-0.02	-0.01	-0.01	-0.01	-0.02	-0.01	-0.01	-0.02
5°	-0.05	-0.05	-0.04	-0.05	-0.05	-0.05	-0.03	-0.07	-0.06	-0.06	-0.07
10°	-0.18	-0.14	-0.13	-0.16	-0.17	-0.18	-0.08	-0.26	-0.17	-0.18	-0.22
15°	-0.36	-0.25	-0.25	-0.31	-0.41	-0.34	-0.32	-0.47	-0.36	-0.42	-0.50
20°	-0.61	-0.46	-0.46	-0.47	-0.69	-0.60	-0.71	-0.73	-0.69	-0.85	-0.99
25°	-0.80	-0.74	-0.84	-0.80	-0.87	-1.01	-0.99	-1.14	-1.05	-1.26	-1.48
30°	-1.07	-1.01	-1.09	-1.18	-1.43	-1.32	-1.55	-1.53	-1.47	-1.78	-2.16
35°	-1.39	-1.60	-1.53	-1.53	-1.68	-1.78	-1.91	-2.17	-1.96	-2.12	-2.73
40°	-1.56	-1.70	-1.83	-2.00	-2.23	-2.21	-2.39	-2.62	-2.50	-2.58	-3.16
45°	-2.13	-2.24	-2.48	-2.44	-2.66	-2.71	-2.86	-3.13	-3.11	-3.12	-3.64
50°	-2.38	-2.64	-2.74	-2.82	-3.13	-3.27	-3.42	-3.72	-3.75	-3.86	-4.44
55°	-2.69	-2.88	-3.11	-3.29	-3.51	-3.83	-4.08	-4.38	-4.54	-4.63	-5.35
60°	-3.28	-3.52	-3.91	-3.95	-4.10	-4.32	-4.74	-5.20	-5.37	-5.44	-6.21
65°	-3.65	-4.21	-4.54	-4.77	-4.73	-4.85	-5.36	-5.95	-6.19	-6.34	-6.91
70°	-3.90	-4.50	-5.08	-5.51	-5.52	-5.41	-5.83	-6.55	-6.88	-7.29	-8.01
75°	-4.09	-4.72	-5.44	-6.02	-6.27	-6.24	-6.53	-7.19	-7.49	-8.17	-9.02
80°	-4.64	-4.80	-5.71	-6.37	-6.85	-7.00	-7.63	-8.19	-8.27	-8.82	-9.94
85°	-5.32	-5.33	-5.81	-6.70	-7.27	-7.66	-8.41	-9.17	-9.02	-9.35	-10.10
90°	-5.56	-5.91	-6.50	-6.95	-7.60	-8.05	-8.78	-9.64	-9.60	-10.06	-11.04
95°	-5.89	-6.36	-7.00	-7.88	-8.08	-8.31	-8.92	-9.94	-10.46	-11.05	-12.75
100°	-5.65	-6.77	-7.39	-8.40	-8.76	-9.00	-9.16	-10.08	-10.59	-11.82	-13.79
105°	-6.13	-6.96	-7.42	-8.66	-9.19	-9.42	-9.87	-10.82	-11.17	-12.40	-13.08
110°	-6.43	-7.37	-7.86	-8.65	-9.31	-9.52	-10.43	-11.62	-12.13	-12.97	-13.56
115°	-6.67	-7.01	-8.07	-9.12	-9.91	-9.96	-10.92	-11.58	-12.26	-13.41	-14.36
120°	-6.38	-6.41	-7.81	-8.68	-9.72	-10.24	-11.43	-12.01	-13.29	-13.48	-14.40
125°	-6.90	-7.08	-8.24	-8.24	-8.97	-9.29	-10.20	-11.64	-13.12	-14.29	-15.66
130°	-8.63	-9.65	-9.85	-9.78	-10.31	-9.66	-9.74	-10.86	-11.25	-12.72	-13.55
135°	-8.53	-9.66	-10.43	-12.12	-13.26	-12.26	-12.35	-13.96	-12.48	-12.85	-13.40
140°	-6.89	-7.78	-9.40	-11.20	-11.63	-11.52	-13.30	-16.63	-15.98	-16.33	-18.76
145°	-5.45	-6.45	-7.85	-8.53	-8.87	-9.70	-12.04	-14.05	-13.06	-13.91	-17.97
150°	-6.60	-7.20	-7.52	-7.66	-8.04	-9.02	-10.61	-11.07	-10.82	-12.50	-15.88
155°	-6.95	-7.79	-8.59	-8.99	-9.47	-10.50	-11.35	-11.16	-11.08	-13.10	-14.79
160°	-7.34	-8.19	-8.85	-9.26	-9.95	-11.00	-11.97	-11.96	-12.60	-15.22	-15.98
165°	-7.41	-7.80	-8.22	-8.49	-9.45	-10.81	-11.89	-12.22	-12.96	-15.38	-15.54
170°	-8.78	-9.34	-9.62	-9.74	-10.28	-11.17	-11.40	-11.27	-11.80	-14.07	-14.35
175°	-7.35	-8.28	-8.96	-9.65	-10.78	-12.06	-12.90	-13.03	-13.80	-16.07	-16.27
180°	-6.05	-6.82	-7.37	-7.91	-8.96	-10.17	-11.05	-11.23	-12.07	-14.63	-14.98
185°	-7.20	-8.12	-8.76	-9.44	-10.55	-11.88	-12.79	-12.94	-13.65	-16.18	-16.74
190°	-8.74	-9.34	-9.64	-9.83	-10.36	-11.30	-11.59	-11.38	-11.80	-14.14	-14.37
195°	-7.48	-7.85	-8.28	-8.51	-9.41	-10.80	-11.98	-12.31	-12.98	-15.78	-16.21
200°	-7.40	-8.30	-9.00	-9.36	-10.03	-11.09	-12.15	-11.91	-12.23	-15.09	-16.44
205°	-6.91	-7.79	-8.62	-8.91	-9.43	-10.60	-11.74	-11.50	-11.19	-13.27	-15.02
210°	-6.70	-7.42	-7.86	-7.82	-8.07	-9.02	-10.75	-11.20	-10.70	-12.27	-15.72
215°	-5.42	-6.39	-7.87	-8.55	-8.82	-9.48	-11.90	-14.07	-12.90	-13.64	-17.70
220°	-6.78	-7.72	-9.28	-11.12	-11.59	-11.43	-13.12	-16.63	-15.95	-16.25	-20.24
225°	-8.40	-9.66	-10.56	-12.10	-13.24	-12.52	-12.77	-14.40	-12.54	-12.97	-14.18
230°	-8.60	-9.68	-10.25	-10.06	-10.29	-9.78	-10.08	-11.11	-10.96	-12.66	-13.84
235°	-6.96	-7.13	-8.26	-8.42	-8.89	-9.22	-10.40	-11.72	-12.71	-14.24	-16.41
240°	-6.33	-6.50	-7.66	-8.70	-9.62	-10.12	-11.67	-12.31	-13.08	-13.12	-14.81
245°	-6.58	-7.13	-7.99	-9.19	-9.84	-9.87	-10.99	-11.75	-12.09	-13.04	-14.41
250°	-6.38	-7.50	-7.89	-8.75	-9.18	-9.38	-10.50	-11.82	-12.18	-12.77	-13.74
255°	-6.10	-6.96	-7.47	-8.78	-9.19	-9.31	-9.93	-11.12	-11.29	-12.23	-13.19
260°	-5.70	-6.71	-7.52	-8.60	-8.93	-9.02	-9.20	-10.16	-10.62	-11.72	-14.27
265°	-5.98	-6.32	-7.08	-7.98	-8.19	-8.38	-9.00	-10.10	-10.44	-10.96	-12.90
270°	-5.56	-5.85	-6.62	-7.08	-7.65	-8.06	-8.85	-9.85	-9.67	-10.05	-11.18
275°	-5.29	-5.35	-5.91	-6.78	-7.32	-7.62	-8.49	-9.34	-9.11	-9.26	-10.16
280°	-4.59	-4.85	-5.81	-6.43	-6.87	-7.02	-7.74	-8.35	-8.37	-8.75	-10.11
285°	-4.04	-4.76	-5.53	-6.08	-6.32	-6.30	-6.68	-7.31	-7.49	-8.18	-9.15
290°	-3.89	-4.52	-5.15	-5.56	-5.59	-5.45	-5.88	-6.61	-6.89	-7.25	-8.12
295°	-3.66	-4.19	-4.59	-4.77	-4.80	-4.87	-5.37	-6.08	-6.14	-6.42	-7.02
300°	-3.30	-3.52	-3.93	-3.95	-4.12	-4.33	-4.81	-5.27	-5.41	-5.53	-6.27
305°	-2.72	-2.90	-3.13	-3.27	-3.53	-3.87	-4.18	-4.42	-4.57	-4.67	-5.43
310°	-2.45	-2.70	-2.76	-2.80	-3.13	-3.31	-3.52	-3.77	-3.77	-3.91	-4.48
315°	-2.14	-2.24	-2.45	-2.41	-2.64	-2.77	-2.97	-3.17	-3.17	-3.16	-3.68
320°	-1.58	-1.68	-1.79	-1.98	-2.23	-2.28	-2.49	-2.68	-2.54	-2.67	-3.21
325°	-1.37	-1.57	-1.54	-1.54	-1.72	-1.80	-2.02	-2.21	-1.97	-2.19	-2.75
330°	-1.05	-1.00	-1.07	-1.15	-1.43	-1.38	-1.59	-1.54	-1.51	-1.83	-2.16
335°	-0.77	-0.71	-0.85	-0.80	-0.89	-1.04	-1.04	-1.13	-1.10	-1.29	-1.48
340°	-0.60	-0.43	-0.42	-0.45	-0.66	-0.64	-0.71	-0.72	-0.71	-0.87	-0.98
345°	-0.34	-0.22	-0.23	-0.29	-0.41	-0.35	-0.33	-0.46	-0.37	-0.43	-0.50
350°	-0.15	-0.11	-0.13	-0.14	-0.17	-0.18	-0.05	-0.24	-0.16	-0.17	-0.18
355°	-0.03	-0.02	-0.02	-0.02	-0.04	-0.04	0.01	-0.05	-0.04	-0.06	-0.03

Tabella A.38 Risposta direzionale per lo schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurata in un piano perpendicolare al display e lungo l'asse del microfono, 500 Hz – 3550 Hz

Angolo	Frequenza											
	500 Hz	630 Hz	800 Hz	1000 Hz	1250 Hz	1600 Hz	2000 Hz	2240 Hz	2500 Hz	2800 Hz	3150 Hz	3550 Hz
0°	0.00	0.00	-0.01	0.00	0.00	-0.01	-0.02	-0.02	-0.02	-0.03	-0.02	-0.02
5°	0.02	0.02	-0.01	0.00	-0.01	-0.01	-0.02	-0.01	-0.02	-0.03	-0.01	-0.03
10°	-0.01	0.00	-0.01	0.00	-0.02	-0.01	-0.03	-0.01	-0.03	-0.03	-0.02	-0.05
15°	0.01	0.00	0.00	0.00	-0.04	-0.02	-0.06	0.00	-0.07	-0.03	-0.05	-0.07
20°	0.02	0.00	0.00	0.02	-0.06	-0.03	-0.10	0.00	-0.11	-0.03	-0.11	-0.07
25°	0.00	-0.01	0.00	0.04	-0.09	-0.06	-0.15	0.00	-0.15	-0.05	-0.20	-0.04
30°	0.00	-0.01	-0.01	0.04	-0.11	-0.09	-0.21	-0.01	-0.19	-0.07	-0.30	0.01
35°	-0.02	-0.02	-0.02	0.04	-0.12	-0.16	-0.27	-0.06	-0.19	-0.14	-0.37	0.03
40°	0.02	0.02	-0.03	0.04	-0.12	-0.25	-0.31	-0.14	-0.16	-0.23	-0.39	-0.02
45°	0.00	0.02	-0.03	0.03	-0.09	-0.37	-0.32	-0.26	-0.14	-0.33	-0.39	-0.17
50°	0.01	0.05	0.00	0.02	-0.07	-0.50	-0.31	-0.36	-0.19	-0.37	-0.44	-0.36
55°	-0.03	0.04	0.03	0.00	-0.05	-0.60	-0.32	-0.39	-0.33	-0.32	-0.57	-0.43
60°	-0.03	0.05	0.07	-0.01	-0.05	-0.63	-0.39	-0.37	-0.53	-0.29	-0.68	-0.41
65°	-0.06	0.03	0.10	0.01	-0.07	-0.60	-0.55	-0.36	-0.63	-0.40	-0.65	-0.51
70°	-0.08	0.01	0.13	0.04	-0.10	-0.54	-0.75	-0.44	-0.59	-0.64	-0.58	-0.69
75°	-0.11	-0.02	0.15	0.09	-0.14	-0.48	-0.92	-0.66	-0.52	-0.80	-0.69	-0.68
80°	-0.13	-0.06	0.15	0.16	-0.15	-0.45	-0.95	-0.93	-0.62	-0.75	-0.97	-0.59
85°	-0.17	-0.10	0.14	0.23	-0.12	-0.48	-0.86	-1.06	-0.93	-0.71	-1.08	-0.79
90°	-0.20	-0.14	0.10	0.29	-0.03	-0.54	-0.72	-0.98	-1.21	-0.95	-0.95	-1.08
95°	-0.24	-0.20	0.04	0.31	0.08	-0.56	-0.67	-0.79	-1.18	-1.33	-1.09	-1.01
100°	-0.28	-0.26	-0.05	0.28	0.20	-0.51	-0.71	-0.69	-0.89	-1.36	-1.56	-1.00
105°	-0.29	-0.29	-0.14	0.22	0.26	-0.38	-0.76	-0.74	-0.72	-1.00	-1.70	-1.49
110°	-0.32	-0.34	-0.24	0.10	0.26	-0.22	-0.71	-0.82	-0.82	-0.75	-1.23	-1.70
115°	-0.32	-0.38	-0.32	-0.04	0.18	-0.12	-0.51	-0.72	-0.95	-0.87	-0.87	-1.13
120°	-0.35	-0.41	-0.38	-0.19	0.02	-0.15	-0.30	-0.44	-0.80	-1.04	-1.00	-0.76
125°	-0.33	-0.41	-0.43	-0.31	-0.17	-0.30	-0.22	-0.19	-0.43	-0.81	-1.18	-0.97
130°	-0.33	-0.41	-0.45	-0.41	-0.36	-0.55	-0.36	-0.16	-0.15	-0.35	-0.86	-1.02
135°	-0.32	-0.40	-0.45	-0.46	-0.50	-0.83	-0.68	-0.41	-0.21	-0.13	-0.36	-0.50
140°	-0.31	-0.39	-0.43	-0.45	-0.56	-1.04	-1.09	-0.86	-0.64	-0.39	-0.29	-0.09
145°	-0.31	-0.37	-0.39	-0.42	-0.55	-1.13	-1.40	-1.33	-1.23	-1.04	-0.81	-0.34
150°	-0.28	-0.33	-0.34	-0.35	-0.47	-1.08	-1.51	-1.57	-1.66	-1.69	-1.66	-1.21
155°	-0.26	-0.30	-0.29	-0.27	-0.37	-0.94	-1.40	-1.52	-1.73	-1.95	-2.24	-2.08
160°	-0.25	-0.28	-0.24	-0.19	-0.26	-0.76	-1.17	-1.27	-1.48	-1.72	-2.17	-2.25
165°	-0.23	-0.25	-0.20	-0.12	-0.16	-0.59	-0.93	-0.96	-1.11	-1.27	-1.68	-1.76
170°	-0.22	-0.23	-0.17	-0.07	-0.08	-0.46	-0.72	-0.70	-0.77	-0.85	-1.15	-1.13
175°	-0.22	-0.22	-0.15	-0.03	-0.03	-0.38	-0.59	-0.53	-0.55	-0.57	-0.79	-0.68
180°	-0.24	-0.25	-0.14	-0.01	-0.01	-0.35	-0.54	-0.47	-0.47	-0.47	-0.66	-0.51
185°	-0.22	-0.21	-0.15	-0.03	-0.02	-0.38	-0.58	-0.51	-0.53	-0.54	-0.74	-0.62
190°	-0.23	-0.24	-0.17	-0.05	-0.07	-0.47	-0.70	-0.66	-0.72	-0.79	-1.06	-1.00
195°	-0.23	-0.25	-0.20	-0.10	-0.14	-0.59	-0.89	-0.90	-1.04	-1.19	-1.55	-1.60
200°	-0.26	-0.29	-0.24	-0.17	-0.24	-0.77	-1.13	-1.20	-1.42	-1.64	-2.08	-2.17
205°	-0.27	-0.31	-0.29	-0.24	-0.35	-0.96	-1.36	-1.47	-1.73	-1.93	-2.27	-2.19
210°	-0.29	-0.35	-0.33	-0.32	-0.46	-1.11	-1.49	-1.58	-1.75	-1.79	-1.85	-1.47
215°	-0.30	-0.37	-0.38	-0.39	-0.54	-1.18	-1.43	-1.41	-1.40	-1.21	-1.04	-0.58
220°	-0.34	-0.41	-0.42	-0.43	-0.57	-1.13	-1.17	-1.01	-0.83	-0.58	-0.44	-0.20
225°	-0.35	-0.43	-0.45	-0.44	-0.53	-0.94	-0.80	-0.57	-0.37	-0.25	-0.39	-0.50
230°	-0.35	-0.43	-0.45	-0.40	-0.41	-0.67	-0.47	-0.30	-0.24	-0.38	-0.81	-0.99
235°	-0.36	-0.43	-0.43	-0.32	-0.25	-0.41	-0.32	-0.28	-0.44	-0.76	-1.16	-0.99
240°	-0.36	-0.42	-0.38	-0.19	-0.08	-0.24	-0.36	-0.47	-0.75	-0.98	-1.03	-0.71
245°	-0.35	-0.39	-0.31	-0.06	0.06	-0.19	-0.54	-0.68	-0.88	-0.85	-0.84	-0.98
250°	-0.33	-0.35	-0.23	0.07	0.14	-0.26	-0.69	-0.74	-0.78	-0.73	-1.13	-1.62
255°	-0.31	-0.31	-0.14	0.17	0.16	-0.38	-0.72	-0.67	-0.72	-0.96	-1.65	-1.60
260°	-0.26	-0.23	-0.05	0.23	0.11	-0.49	-0.66	-0.63	-0.88	-1.36	-1.63	-1.06
265°	-0.25	-0.20	0.03	0.26	0.04	-0.52	-0.62	-0.75	-1.18	-1.39	-1.14	-0.95
270°	-0.22	-0.14	0.08	0.24	-0.05	-0.48	-0.69	-0.97	-1.27	-1.01	-0.94	-1.07
275°	-0.19	-0.10	0.11	0.19	-0.11	-0.42	-0.84	-1.09	-1.00	-0.70	-1.05	-0.87
280°	-0.14	-0.05	0.13	0.11	-0.12	-0.40	-0.95	-0.99	-0.66	-0.70	-1.01	-0.61
285°	-0.13	-0.04	0.14	0.06	-0.09	-0.43	-0.94	-0.72	-0.51	-0.77	-0.75	-0.66
290°	-0.08	0.01	0.12	0.01	-0.06	-0.51	-0.78	-0.48	-0.56	-0.63	-0.60	-0.73
295°	-0.06	0.03	0.09	-0.01	-0.02	-0.59	-0.57	-0.37	-0.60	-0.41	-0.67	-0.50
300°	-0.04	0.03	0.05	-0.02	-0.01	-0.62	-0.40	-0.38	-0.49	-0.30	-0.71	-0.29
305°	-0.01	0.04	0.02	-0.01	-0.02	-0.59	-0.31	-0.40	-0.29	-0.36	-0.56	-0.27
310°	0.00	0.04	-0.01	0.02	-0.04	-0.49	-0.31	-0.36	-0.14	-0.43	-0.34	-0.30
315°	-0.01	0.01	-0.03	0.04	-0.08	-0.37	-0.32	-0.25	-0.10	-0.39	-0.23	-0.26
320°	0.03	0.03	-0.04	0.06	-0.11	-0.24	-0.31	-0.12	-0.12	-0.26	-0.22	-0.18
325°	0.01	0.00	-0.03	0.07	-0.12	-0.14	-0.27	-0.03	-0.17	-0.11	-0.23	-0.09
330°	0.02	0.00	-0.01	0.06	-0.11	-0.07	-0.21	0.03	-0.19	-0.01	-0.23	-0.06
335°	0.01	0.00	0.00	0.05	-0.09	-0.03	-0.14	0.05	-0.16	0.05	-0.19	-0.03
340°	0.00	0.00	0.00	0.03	-0.06	-0.01	-0.08	0.05	-0.11	0.06	-0.13	-0.01
345°	0.00	0.00	0.00	0.02	-0.03	0.00	-0.04	0.04	-0.06	0.06	-0.07	0.01
350°	0.00	-0.01	0.01	0.01	-0.01	0.01	0.00	0.03	-0.02	0.05	-0.02	0.03
355°	0.00	0.00	0.00	0.02	0.01	0.01	0.01	0.03	0.01	0.03	0.01	0.03

Tabella A.39 Risposta direzionale per lo schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurata in un piano perpendicolare al display e lungo l'asse del microfono, 4000 Hz – 10600 Hz

Angolo	Frequenza											
	4000 Hz	4500 Hz	5000 Hz	5600 Hz	6300 Hz	7100 Hz	8000 Hz	8500 Hz	9000 Hz	9500 Hz	10000 Hz	10600 Hz
0°	-0.02	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.04	-0.04	-0.03	-0.03	-0.03
5°	-0.01	-0.03	-0.04	-0.07	-0.05	-0.01	-0.06	-0.07	0.00	-0.03	-0.03	0.00
10°	0.00	-0.04	-0.05	-0.14	-0.10	0.01	-0.16	-0.14	0.02	-0.08	-0.07	-0.01
15°	0.01	-0.08	-0.08	-0.24	-0.19	0.03	-0.28	-0.19	-0.01	-0.23	-0.14	-0.08
20°	0.00	-0.15	-0.12	-0.33	-0.29	-0.02	-0.34	-0.30	-0.20	-0.53	-0.24	-0.31
25°	-0.04	-0.23	-0.14	-0.35	-0.30	-0.17	-0.36	-0.57	-0.66	-0.75	-0.33	-0.62
30°	-0.12	-0.31	-0.18	-0.33	-0.22	-0.29	-0.59	-1.00	-1.01	-0.69	-0.50	-0.77
35°	-0.22	-0.36	-0.30	-0.48	-0.29	-0.21	-1.04	-1.07	-1.12	-0.97	-1.11	-0.97
40°	-0.30	-0.41	-0.52	-0.82	-0.71	-0.33	-1.05	-1.20	-1.63	-1.61	-1.22	-1.09
45°	-0.30	-0.49	-0.71	-0.99	-0.91	-0.69	-1.15	-1.79	-1.73	-1.82	-1.41	-1.66
50°	-0.24	-0.64	-0.78	-0.92	-0.82	-0.64	-1.37	-1.76	-2.11	-2.30	-1.99	-1.82
55°	-0.27	-0.81	-0.86	-1.24	-1.30	-1.01	-1.32	-2.11	-2.53	-2.32	-2.47	-2.30
60°	-0.46	-0.84	-1.04	-1.57	-1.48	-1.21	-1.81	-2.04	-2.62	-3.16	-2.46	-2.65
65°	-0.65	-0.81	-1.17	-1.52	-1.43	-1.21	-1.69	-2.62	-2.86	-3.09	-3.27	-2.96
70°	-0.66	-1.03	-1.30	-1.80	-1.96	-1.77	-2.24	-2.54	-3.42	-3.47	-3.33	-3.56
75°	-0.75	-1.26	-1.34	-1.94	-1.81	-1.63	-2.19	-3.08	-3.37	-4.16	-3.64	-3.68
80°	-0.94	-1.25	-1.56	-2.00	-2.17	-2.28	-2.73	-3.12	-3.95	-4.03	-4.48	-4.00
85°	-0.88	-1.39	-1.81	-2.26	-2.27	-2.06	-2.85	-3.39	-4.10	-4.52	-4.34	-4.81
90°	-0.91	-1.55	-1.86	-2.47	-2.40	-2.43	-3.17	-3.82	-4.11	-4.90	-4.68	-4.73
95°	-1.27	-1.48	-2.11	-2.68	-2.77	-2.46	-3.49	-3.77	-4.75	-4.84	-4.91	-5.03
100°	-1.35	-1.83	-2.10	-2.82	-2.85	-2.67	-3.46	-4.20	-4.67	-5.10	-5.24	-5.09
105°	-1.27	-2.02	-2.36	-3.02	-3.08	-2.88	-3.96	-4.20	-4.79	-5.41	-5.41	-5.52
110°	-1.74	-1.95	-2.75	-3.23	-3.18	-2.83	-4.03	-4.82	-5.33	-5.65	-5.50	-5.96
115°	-1.94	-2.46	-2.68	-3.61	-3.55	-3.18	-4.10	-4.62	-5.66	-6.25	-6.19	-6.00
120°	-1.20	-2.49	-3.13	-3.61	-3.85	-3.41	-4.50	-5.26	-5.84	-6.16	-6.53	-6.57
125°	-0.90	-1.63	-2.86	-4.03	-3.85	-3.67	-4.79	-5.59	-6.45	-7.14	-6.74	-6.66
130°	-1.26	-1.56	-2.03	-3.24	-4.04	-3.56	-4.92	-5.95	-7.07	-7.49	-7.42	-7.22
135°	-1.09	-1.88	-2.22	-2.67	-2.86	-3.28	-4.57	-5.55	-6.59	-7.54	-7.88	-7.74
140°	-0.40	-1.32	-2.29	-3.17	-3.08	-2.43	-3.75	-4.81	-5.90	-6.54	-6.68	-7.22
145°	-0.21	-0.73	-1.50	-2.61	-3.19	-3.15	-3.76	-4.51	-5.12	-5.44	-5.31	-5.66
150°	-0.91	-1.07	-1.34	-1.90	-2.15	-2.40	-3.85	-4.82	-5.81	-6.16	-5.73	-5.65
155°	-2.07	-2.28	-2.38	-2.57	-2.27	-1.86	-2.85	-3.67	-4.54	-5.20	-5.48	-5.82
160°	-2.65	-3.29	-3.73	-4.27	-4.01	-3.34	-3.63	-4.08	-4.47	-4.70	-4.75	-4.95
165°	-2.21	-3.03	-3.81	-4.88	-5.25	-5.40	-6.14	-6.66	-7.10	-7.17	-7.03	-7.18
170°	-1.43	-2.13	-2.83	-3.82	-4.16	-4.52	-5.87	-6.78	-7.75	-8.33	-8.84	-9.86
175°	-0.86	-1.43	-1.97	-2.76	-2.87	-2.87	-3.87	-4.58	-5.29	-5.73	-6.03	-6.59
180°	-0.64	-1.15	-1.64	-2.34	-2.36	-2.20	-3.03	-3.65	-4.23	-4.56	-4.76	-5.11
185°	-0.78	-1.33	-1.86	-2.63	-2.71	-2.64	-3.59	-4.29	-4.97	-5.39	-5.70	-6.10
190°	-1.27	-1.93	-2.62	-3.57	-3.84	-4.11	-5.42	-6.34	-7.30	-7.93	-8.38	-9.05
195°	-2.03	-2.81	-3.63	-4.71	-5.11	-5.51	-6.54	-7.24	-7.82	-8.05	-7.77	-8.01
200°	-2.61	-3.30	-3.88	-4.55	-4.53	-3.97	-4.17	-4.57	-4.94	-5.10	-4.98	-5.15
205°	-2.30	-2.61	-2.73	-2.98	-2.76	-2.08	-2.90	-3.66	-4.48	-5.02	-5.19	-5.50
210°	-1.22	-1.39	-1.57	-2.11	-2.27	-2.19	-3.73	-4.78	-5.87	-6.24	-5.87	-5.98
215°	-0.40	-0.86	-1.53	-2.62	-3.00	-3.27	-3.94	-4.53	-4.95	-5.12	-5.09	-5.18
220°	-0.42	-1.29	-2.24	-3.24	-3.17	-2.45	-3.14	-4.09	-5.47	-6.59	-6.80	-7.09
225°	-1.03	-1.86	-2.31	-2.71	-2.74	-2.65	-4.58	-5.89	-6.86	-7.47	-7.62	-7.66
230°	-1.26	-1.57	-1.94	-3.04	-3.70	-4.00	-4.84	-5.77	-7.14	-7.84	-7.61	-7.29
235°	-0.88	-1.45	-2.64	-4.06	-4.18	-3.52	-4.94	-5.87	-6.46	-7.18	-7.14	-6.91
240°	-1.03	-2.29	-3.32	-3.78	-3.80	-3.78	-4.30	-5.11	-6.21	-6.57	-6.83	-6.72
245°	-1.82	-2.63	-2.72	-3.70	-3.76	-3.02	-4.27	-4.96	-5.85	-6.35	-5.83	-6.11
250°	-1.88	-1.99	-2.71	-3.43	-3.27	-3.18	-4.03	-4.67	-5.05	-5.94	-6.19	-5.84
255°	-1.30	-1.97	-2.63	-3.05	-3.33	-2.88	-3.73	-4.38	-5.39	-5.51	-5.49	-5.40
260°	-1.25	-2.00	-2.09	-3.03	-3.03	-2.67	-3.75	-4.26	-4.83	-5.16	-5.24	-5.51
265°	-1.34	-1.51	-2.24	-2.83	-2.69	-2.77	-3.34	-3.93	-4.58	-5.23	-5.10	-4.95
270°	-1.00	-1.57	-2.04	-2.46	-2.76	-2.34	-3.08	-3.81	-4.47	-4.91	-4.72	-5.21
275°	-0.85	-1.59	-1.72	-2.43	-2.32	-2.14	-2.92	-3.53	-4.15	-4.69	-4.99	-4.35
280°	-1.01	-1.22	-1.64	-2.30	-2.17	-2.11	-2.64	-3.19	-4.20	-4.44	-4.32	-4.20
285°	-0.82	-1.10	-1.58	-1.88	-1.92	-1.75	-2.19	-3.30	-3.58	-4.32	-3.83	-3.93
290°	-0.57	-1.12	-1.39	-1.87	-1.89	-1.61	-2.41	-2.71	-3.69	-3.67	-3.62	-3.62
295°	-0.52	-1.01	-1.11	-1.62	-1.50	-1.28	-1.76	-2.83	-3.02	-3.42	-3.31	-2.99
300°	-0.52	-0.88	-1.07	-1.51	-1.42	-1.28	-1.90	-2.23	-2.94	-3.03	-2.63	-2.73
305°	-0.44	-0.68	-0.97	-1.31	-1.24	-0.85	-1.50	-2.27	-2.52	-2.63	-2.51	-2.46
310°	-0.33	-0.55	-0.79	-1.00	-1.04	-0.64	-1.41	-1.87	-2.33	-2.32	-1.95	-1.91
315°	-0.25	-0.54	-0.62	-0.96	-0.95	-0.80	-1.29	-1.88	-1.74	-1.95	-1.67	-1.72
320°	-0.13	-0.50	-0.50	-0.84	-0.63	-0.31	-1.09	-1.35	-1.68	-1.51	-1.39	-1.22
325°	-0.03	-0.41	-0.34	-0.62	-0.38	-0.21	-1.07	-1.08	-1.20	-1.18	-1.01	-1.06
330°	0.01	-0.27	-0.19	-0.44	-0.39	-0.33	-0.64	-1.05	-0.88	-0.89	-0.59	-0.70
335°	0.01	-0.15	-0.10	-0.31	-0.37	-0.19	-0.37	-0.67	-0.68	-0.67	-0.47	-0.63
340°	0.00	-0.06	-0.04	-0.18	-0.24	-0.03	-0.31	-0.31	-0.44	-0.35	-0.31	-0.25
345°	-0.01	0.00	-0.01	-0.07	-0.09	0.03	-0.25	-0.11	-0.23	-0.14	-0.16	-0.01
350°	0.00	0.01	0.02	0.01	0.01	0.02	-0.13	-0.01	-0.09	-0.05	-0.08	0.00
355°	0.01	0.02	0.03	0.04	0.04	0.02	-0.02	0.04	-0.01	0.01	0.00	0.00

Tabella A.40 Risposta direzionale per lo schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, misurata in un piano perpendicolare al display e lungo l'asse del microfono, 11200 Hz – 20000 Hz

Angolo	Frequenza										
	11200 Hz	11800 Hz	12500 Hz	13200 Hz	14000 Hz	15000 Hz	16000 Hz	17000 Hz	18000 Hz	19000 Hz	20000 Hz
0°	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.04
5°	-0.05	-0.04	-0.01	-0.04	-0.07	-0.08	-0.03	-0.08	-0.07	-0.03	-0.07
10°	-0.16	-0.11	-0.07	-0.12	-0.16	-0.23	-0.07	-0.23	-0.15	-0.12	-0.21
15°	-0.33	-0.20	-0.19	-0.27	-0.33	-0.38	-0.33	-0.38	-0.32	-0.43	-0.54
20°	-0.62	-0.41	-0.42	-0.49	-0.68	-0.62	-0.73	-0.59	-0.75	-0.88	-0.99
25°	-0.91	-0.86	-0.83	-0.72	-0.97	-1.18	-0.98	-1.06	-1.05	-1.33	-1.53
30°	-1.03	-1.21	-1.13	-1.13	-1.37	-1.39	-1.68	-1.40	-1.48	-1.84	-2.09
35°	-1.50	-1.60	-1.46	-1.50	-1.73	-1.96	-2.00	-2.12	-1.84	-2.29	-2.71
40°	-1.77	-1.89	-2.07	-2.02	-2.18	-2.27	-2.51	-2.69	-2.36	-2.63	-3.15
45°	-2.10	-2.39	-2.43	-2.27	-2.52	-2.77	-3.09	-3.18	-2.99	-3.12	-3.61
50°	-2.35	-2.70	-2.75	-2.83	-3.06	-3.42	-3.56	-3.69	-3.73	-3.87	-4.38
55°	-2.94	-3.28	-3.56	-3.51	-3.61	-3.86	-4.17	-4.38	-4.57	-4.77	-5.35
60°	-3.14	-3.74	-4.03	-4.21	-4.05	-4.37	-4.82	-5.21	-5.39	-5.61	-6.24
65°	-3.57	-4.06	-4.58	-4.75	-4.72	-4.76	-5.53	-6.00	-6.15	-6.41	-7.00
70°	-3.94	-4.52	-5.04	-5.51	-5.34	-5.39	-5.89	-6.70	-6.86	-7.28	-7.99
75°	-4.50	-4.81	-5.47	-5.95	-6.25	-6.20	-6.66	-7.24	-7.62	-8.22	-9.12
80°	-4.56	-5.36	-5.69	-6.29	-6.82	-7.26	-7.85	-8.19	-8.31	-8.96	-9.77
85°	-4.84	-5.53	-6.18	-6.58	-7.21	-8.09	-9.07	-9.51	-8.92	-9.35	-9.97
90°	-5.44	-6.01	-6.76	-6.96	-7.71	-8.44	-9.61	-9.94	-9.72	-10.19	-11.31
95°	-5.73	-6.25	-7.64	-7.86	-8.05	-8.66	-9.38	-9.83	-10.23	-11.45	-13.60
100°	-6.16	-6.73	-7.83	-8.51	-9.02	-8.99	-9.12	-9.96	-10.89	-12.40	-14.32
105°	-6.27	-6.91	-8.13	-8.80	-9.25	-9.43	-10.14	-10.90	-11.21	-12.65	-13.41
110°	-6.43	-7.10	-8.06	-8.71	-9.71	-9.88	-10.92	-11.80	-12.09	-12.87	-13.47
115°	-6.43	-7.20	-8.07	-8.58	-9.80	-10.21	-11.66	-11.79	-12.33	-13.45	-15.09
120°	-6.89	-7.28	-7.94	-8.57	-9.99	-10.31	-11.46	-11.61	-13.04	-14.02	-15.79
125°	-7.09	-7.75	-8.65	-9.12	-10.08	-9.95	-10.88	-11.71	-12.78	-14.54	-15.43
130°	-7.79	-8.52	-9.15	-9.91	-10.59	-10.25	-11.14	-12.06	-12.02	-14.08	-14.10
135°	-8.26	-8.98	-10.05	-11.57	-11.43	-10.91	-12.03	-13.70	-12.32	-13.79	-14.95
140°	-8.02	-9.26	-10.86	-11.89	-11.36	-11.53	-13.59	-15.86	-13.56	-14.23	-17.67
145°	-6.88	-8.26	-9.66	-10.05	-10.51	-11.84	-14.64	-15.57	-13.60	-14.96	-19.20
150°	-6.30	-7.14	-7.72	-8.24	-9.29	-11.04	-12.67	-12.38	-12.08	-15.04	-19.12
155°	-7.02	-8.15	-8.81	-8.63	-8.73	-9.82	-10.94	-10.62	-11.23	-14.57	-16.07
160°	-5.78	-6.77	-7.36	-7.81	-9.10	-11.07	-12.24	-11.56	-11.65	-14.47	-14.14
165°	-7.57	-7.79	-7.72	-7.52	-8.26	-9.75	-10.56	-10.18	-11.12	-14.58	-14.48
170°	-11.29	-12.12	-12.63	-12.58	-13.05	-14.00	-13.88	-12.84	-13.07	-15.69	-14.86
175°	-7.85	-8.88	-9.58	-10.36	-11.79	-13.83	-14.77	-15.06	-16.33	-19.95	-20.12
180°	-6.12	-6.90	-7.31	-7.81	-8.92	-10.54	-11.26	-11.07	-11.93	-15.18	-14.63
185°	-7.23	-8.17	-8.75	-9.42	-10.68	-12.58	-13.54	-13.54	-14.49	-18.21	-18.30
190°	-10.59	-11.76	-12.67	-13.17	-14.36	-15.81	-16.07	-15.01	-15.14	-17.76	-16.88
195°	-8.53	-8.81	-8.70	-8.38	-8.96	-10.30	-11.12	-10.49	-10.96	-14.88	-14.94
200°	-5.93	-6.83	-7.39	-7.70	-8.69	-10.77	-12.56	-12.09	-12.38	-15.73	-15.98
205°	-6.83	-8.27	-9.42	-9.36	-9.42	-10.39	-11.56	-10.70	-10.45	-14.11	-16.24
210°	-6.56	-7.32	-7.80	-7.85	-8.46	-10.26	-12.59	-12.60	-11.39	-13.63	-18.02
215°	-6.27	-7.89	-9.69	-10.14	-10.12	-11.01	-14.26	-16.67	-14.10	-14.23	-18.83
220°	-7.74	-8.92	-10.82	-12.49	-11.98	-11.33	-13.25	-17.20	-14.53	-13.63	-18.89
225°	-8.46	-9.16	-10.36	-11.90	-12.15	-10.93	-11.63	-14.49	-13.29	-13.40	-15.73
230°	-7.80	-8.91	-9.57	-9.95	-11.06	-10.89	-10.71	-12.29	-12.15	-13.75	-15.84
235°	-7.03	-8.14	-9.15	-8.91	-9.80	-10.53	-11.05	-12.80	-12.31	-14.18	-16.52
240°	-6.70	-7.09	-8.46	-8.98	-10.06	-10.44	-11.47	-12.77	-12.57	-13.87	-16.21
245°	-7.05	-7.33	-8.39	-8.65	-9.63	-10.07	-11.90	-12.53	-12.00	-13.20	-15.33
250°	-6.57	-7.12	-8.24	-8.90	-9.72	-9.28	-11.01	-12.75	-12.39	-12.78	-14.32
255°	-6.45	-7.10	-8.19	-8.80	-9.47	-9.47	-10.21	-11.63	-11.97	-12.37	-14.31
260°	-5.98	-6.64	-7.97	-9.23	-9.17	-9.03	-9.83	-10.48	-11.37	-12.23	-15.17
265°	-5.65	-6.79	-7.40	-8.50	-8.78	-8.67	-9.57	-10.38	-10.47	-11.16	-14.09
270°	-5.21	-6.19	-6.97	-7.56	-7.96	-8.71	-9.56	-10.57	-10.00	-10.30	-11.53
275°	-5.13	-5.88	-6.25	-7.13	-7.43	-8.11	-9.23	-10.12	-9.66	-9.78	-10.67
280°	-4.83	-5.25	-6.20	-6.54	-7.15	-7.43	-8.35	-8.67	-8.65	-8.96	-10.12
285°	-4.41	-5.06	-5.71	-6.34	-6.57	-6.71	-6.94	-7.55	-7.72	-8.29	-9.69
290°	-3.99	-4.65	-5.37	-5.88	-5.84	-5.77	-6.23	-6.90	-7.13	-7.58	-8.65
295°	-3.66	-4.24	-4.96	-5.18	-5.06	-4.99	-5.75	-6.44	-6.53	-6.80	-7.48
300°	-3.36	-4.03	-4.46	-4.42	-4.19	-4.51	-5.22	-5.64	-5.72	-5.95	-6.78
305°	-3.07	-3.48	-3.61	-3.47	-3.58	-4.03	-4.44	-4.81	-4.92	-4.97	-5.81
310°	-2.49	-2.76	-2.90	-2.87	-3.17	-3.59	-3.97	-4.02	-3.91	-4.04	-4.71
315°	-2.29	-2.68	-2.68	-2.56	-2.81	-3.18	-3.35	-3.38	-3.16	-3.41	-4.01
320°	-1.85	-1.86	-1.96	-2.05	-2.37	-2.53	-2.79	-3.01	-2.65	-2.90	-3.48
325°	-1.60	-1.76	-1.63	-1.59	-1.97	-2.18	-2.21	-2.21	-2.08	-2.43	-2.94
330°	-1.00	-1.09	-1.10	-1.26	-1.54	-1.63	-1.92	-1.65	-1.73	-2.11	-2.27
335°	-1.01	-0.99	-0.90	-0.93	-1.09	-1.21	-1.07	-1.18	-1.17	-1.46	-1.69
340°	-0.57	-0.46	-0.36	-0.46	-0.82	-0.79	-0.84	-0.72	-0.82	-0.97	-1.08
345°	-0.18	-0.16	-0.20	-0.28	-0.45	-0.44	-0.43	-0.46	-0.49	-0.57	-0.63
350°	-0.06	-0.10	-0.17	-0.16	-0.15	-0.20	-0.04	-0.30	-0.12	-0.19	-0.17
355°	0.00	-0.02	-0.06	-0.03	-0.01	-0.03	0.05	-0.06	0.01	-0.02	-0.01

Tabella A.41 Variazioni della sensibilità per lo schermo antivento UA-1650, microfono 4191, preamplificatore microfono ZC-0032 ed analizzatore 2250/2270, con preamplificatore montato direttamente sullo strumento, agli angoli d'incidenza sonora compresi tra $\pm\theta^\circ$ dalla direzione di riferimento

Frequenza nominale	Frequenza esatta	Variaz. max $\pm 30^\circ$ dB	Variaz. max $\pm 90^\circ$ dB	Variaz. max $\pm 150^\circ$ dB
500 Hz	501.187 Hz	0.05	0.43	0.59
630 Hz	630.957 Hz	0.06	0.39	0.70
800 Hz	794.328 Hz	0.03	0.19	0.61
1000 Hz	1000 Hz	0.07	0.31	0.77
1250 Hz	1258.93 Hz	0.12	0.17	0.83
1600 Hz	1584.89 Hz	0.10	0.65	1.19
2000 Hz	1995.26 Hz	0.23	0.97	1.52
2240 Hz	2238.72 Hz	0.07	1.14	1.63
2500 Hz	2511.89 Hz	0.21	1.29	1.78
2800 Hz	2818.38 Hz	0.14	1.07	1.85
3150 Hz	3162.28 Hz	0.32	1.14	1.87
3550 Hz	3548.13 Hz	0.10	1.24	1.74
4000 Hz	3981.07 Hz	0.25	1.31	1.97
4500 Hz	4466.84 Hz	0.44	1.62	2.66
5000 Hz	5011.87 Hz	0.45	2.07	3.36
5600 Hz	5623.41 Hz	0.68	2.56	4.10
6300 Hz	6309.57 Hz	0.61	2.82	4.23
7100 Hz	7079.46 Hz	0.36	2.59	4.06
8000 Hz	7943.28 Hz	0.69	3.40	5.29
8500 Hz	8413.95 Hz	1.09	3.86	6.49
9000 Hz	8912.51 Hz	1.05	4.51	7.18
9500 Hz	9440.61 Hz	0.93	4.94	7.88
10000 Hz	10000 Hz	0.62	5.02	8.10
10600 Hz	10592.5 Hz	0.83	5.24	8.23
11200 Hz	11220.2 Hz	1.10	5.59	8.66
11800 Hz	11885.0 Hz	1.24	6.22	9.71
12500 Hz	12589.3 Hz	1.16	7.00	10.89
13200 Hz	13335.2 Hz	1.29	7.60	12.53
14000 Hz	14125.4 Hz	1.57	7.99	13.29
15000 Hz	14962.4 Hz	1.66	8.74	12.55
16000 Hz	15848.9 Hz	1.96	9.66	14.69
17000 Hz	16788.0 Hz	1.68	10.60	17.23
18000 Hz	17782.8 Hz	1.75	10.03	16.00
19000 Hz	18836.5 Hz	2.14	10.33	16.36
20000 Hz	19952.6 Hz	2.32	11.57	20.29

Tabella A.42 Il microfono 4191 non ha specifiche con il kit per microfono da esterni UA-1404

Tabella A.43 Il microfono 4191 non ha specifiche con il kit per microfono da esterni UA-1404

Tabella A.44 Il microfono 4191 non ha specifiche con il kit per microfono da esterni UA-1404

Tabella A.45 Il microfono 4191 non ha specifiche con il kit per microfono da esterni UA-14044

Tabella A.46 Il microfono 4191 non ha specifiche con il kit per microfono da esterni UA-1404

Tabella A.47 Il microfono 4191 non ha specifiche con il kit per microfono da esterni UA-1404

Tabella A.48 Il microfono 4191 non ha specifiche con il kit per microfono da esterni UA-1404

A.6 Verifiche periodiche delle risposte in frequenza al segnale acustico

Questa sezione fornisce i dati di regolazione che devono essere applicati ai livelli sonori visualizzati in risposta alla pressione sonora prodotta dal calibratore acustico multifunzione 4226, o in risposta alla simulazione della pressione sonora proveniente dall'attuatore elettrostatico UA-0033, in modo da poter ottenere i livelli sonori equivalenti a quelli che si dovrebbero visualizzare in situazioni ambientali di riferimento, in risposta alle onde sonore sinusoidali progressive piane provenienti dalla direzione di riferimento. Si veda di seguito la tabella A.49 e la tabella A.50.

Tabella A.49 Verifica acustica con calibratore acustico multifunzione 4226. Dati di regolazione che devono essere applicati alle letture del 2250/2270, in modo da ottenere i livelli sonori equivalenti a quelli che dovrebbero essere visualizzati in risposta alle onde sonore progressive piane provenienti dalla direzione di riferimento

Frequenza nominale	Dati di correzione per preamp. collegato ad un cavo d'estensione dB	Incertezza estesa dB	Dati di correzione per preamp. montato direttamente sul 2250/2270 dB	Incertezza estesa dB
31.5	0.00	0.30	0.00	0.32
63	0.00	0.06	0.00	0.12
125	0.00	0.05	0.00	0.11
250	0.00	0.05	0.06	0.11
500	0.05	0.05	0.27	0.11
1000	0.12	0.05	0.03	0.11
2000	0.32	0.09	0.22	0.14
4000	0.99	0.11	1.03	0.19
8000	3.14	0.22	2.95	0.30
12500	6.21	0.27	6.18	0.34
16000	7.49	0.32	7.45	0.38

Tabella A.50 Verifica acustica con Attuatore elettrostatico UA-0033. Dati di regolazione che devono essere applicati alle letture del 2250/2270, in modo da ottenere i livelli sonori equivalenti a quelli che dovrebbero essere visualizzati in risposta alle onde sonore progressive piane provenienti dalla direzione di riferimento

Frequenza nominale	Frequenza esatta	Dati di correzione per preamp. collegato ad un cavo d'estensione dB	Incertezza estesa dB	Dati di correzione per preamp. montato direttamente sul 2250/2270 dB	Incertezza estesa dB
31.5	31.6228	0.00	0.02	0.00	0.10
63	63.0957	0.00	0.02	0.00	0.10
125	125.893	0.00	0.02	0.00	0.10
250	251.189	0.00	0.02	0.07	0.10
500	501.187	0.02	0.02	0.25	0.10
1000	1000	0.10	0.02	0.01	0.10
2000	1995.26	0.31	0.05	0.21	0.11
4000	3981.07	1.03	0.08	1.06	0.17
8000	7943.28	3.33	0.09	3.14	0.22
12500	12589.3	6.67	0.11	6.64	0.23
16000	15848.9	8.21	0.12	8.18	0.23

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