B-81

High Output Bone Transducer

The Gold Standard of Audiometric Transducers

#8506737

Features

- **Reliable performance**
- **Meets industry standards**
- **High maximum output, low distortion**
- **Mechanically robust**
- **Sensitivity: 119 dB re.1 µN @ 1 VRMS & 1 kHz**
- **Total harmonic distortion: 1.1% @ 1 VRMS & 1 kHz**
- **Impedance: 12.5 ohm @ 1 kHz**
- **Secured plug concept**
- **RoHS compliant**

Products:

- **B-81 Bone Transducer, item #8104108**
- **Custom Safety Cable, item #8104110**
- **Standard Transducer Headband, item #8011098**
- **Pre-assembled packaged *(incl. #8104108, #8104110, #8011098)*, item #8506491**

Audiometric Benefit

"The B-81 bone vibrator provides higher output and lower harmonic distortion compared to the B71. This may offer a significant clinical advantage. Conductive components of severe hearing losses that cannot be measured with the B71 vibrator may be measurable with the B-81. This is important for medical diagnosis and treatment, programming hearing aids, and determining cochlear implant candidacy."

Robert H. Margolis
Professor Emeritus, University of Minnesota

RadioEar B-81 Bone Transducer

The B-81 is the new audiometric Bone Conductor from RadioEar. This new and enhanced bone conductor achieves higher output levels at low frequencies with a superior distortion performance. With the B-81 it is now possible, for example, to reliably measure bone conduction thresholds up to 50 dBHL at 250 Hz.

The B-81 is based on the Balanced Electro-magnetic Separation Transducer (BEST principle), where static forces are counter-balanced so that non-linear distortion forces are reduced and maximum output levels can be increased. Furthermore, the robust mechanical construction results in a significantly improved shock resistance compared to conventional designs.

The B-81 is compatible with all standard headbands and high quality cables. It also has the capability of using a custom cable designed to securely attach the plug to the transducer body. This safety feature eliminates the possibility of accidentally unplugging the device while in use.

RADIOEAR

B-81

Technical Specifications

Technical Performance

- The maximum output of the B-81 can be increased by 5-20 dB over the whole frequency range and still not exceed 5.5% THD or 6 VRMS drive voltage in reference to the IEC-ANSI Type 1 standard values. At 250 Hz, the maximum output for B-81 (median 48 dB HL) meets the standard IEC 60645-1.
- Measurements performed on Brüel & Kjær 4930, Artificial Mastoid with static force 5,4N.
- Reference equivalent threshold force levels (RETFLs) for bone vibrators.

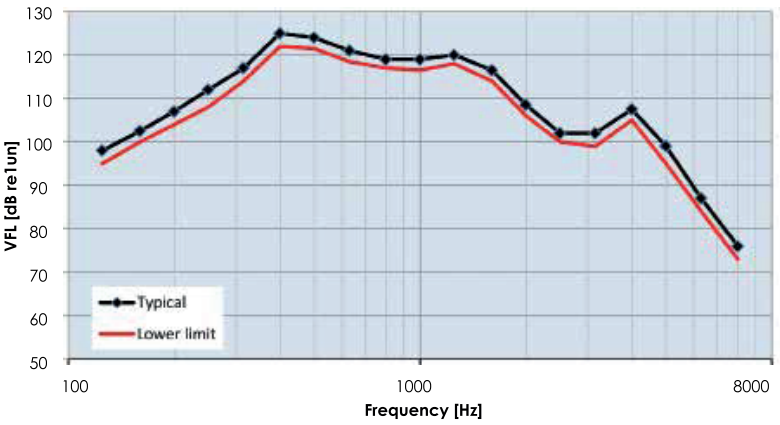
Compliance Standards

- IEC 606045-1:2001: Electroacoustics – Audiological equipment.
  Part 1: Pure- tone audiometers
- ANSI/ASA S3.6-2010 American National Standard Specification for Audiometers
- ISO 389-3:1994: Acoustics – Reference zero for the calibration of audiometric equipment.
  Part 3: Reference equivalent threshold force levels for pure tones and bone vibrators.

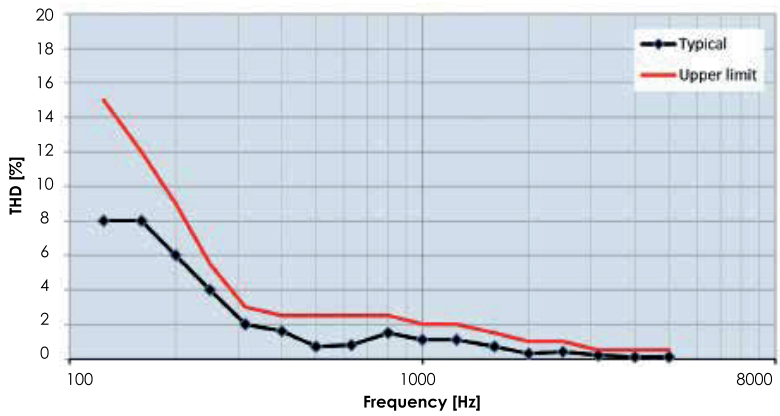
Frequency Hz	Mastold (dB re 1uN)	Forehead (dB re 1uN)	Forehead minus mastoid
250	67.0	79.0	12.0
315	64.0	76.5	12.5
400	61.0	74.5	13.5
500	58.0	72.0	14.0
630	52.5	66.0	13.5
750	48.5	61.5	13.0
800	47.0	59.0	12.0
1000	42.5	51.0	8.5
1250	39.0	49.0	10.0
1500	36.5	47.5	11.0
1600	35.5	46.5	11.0
2000	31.0	42.5	11.5
2500	29.5	41.5	12.0
3150	31.0	42.5	11.5
4000	35.5	43.5	8.0
5000	40.0	51.0	11.0
6000	40.0	51.0	11.0
6300	40.0	50.0	10.0
8000	40.0	50.0	10.0
Speech	55.0	63.5	8.5

Table taken from ANSI standard (ANSI/ASA S3.6-2010) levels (RETFLs) for bone vibrators.

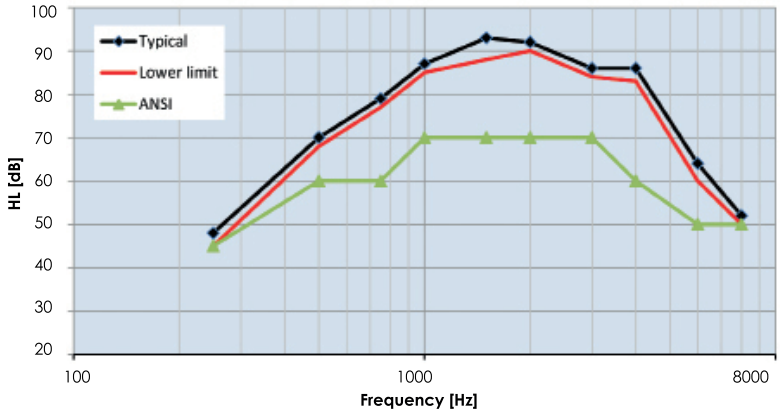
Graph 1: Vibratory Force Level (VFL)



Graph 2: Total Harmonic Distortion (THD) at Maximum Output



Graph 3: Maxium Output HL



Dimensions

- **Height – 16 mm**
- **Length – 31.7 mm**
- **Width – 18.2 mm**
- **Weight: 20 g**