

3M™ Occupational Health and Environmental Safety Division

3M™ E-A-Rfit™ Validation System



Fit Testing for Hearing Protectors

Leading the Advancement of Hearing Conservation™



It Takes Less Than 10 Seconds Per Ear and 3 Simple Steps to Combat NIHL.

Don't put your workers at risk by relying solely on lab-based noise reduction ratings (NRR)*

Get a personalized attenuation rating (PAR) for each worker. Once a subject is fitted, it takes less than 10 seconds per ear to test 7 standard frequencies. Just self-fit earplugs, connect to the microphone, and run the test.



• Workers fit earplugs themselves.



ADVANTAGE:

Reflects an individual's fitting methods and indicates if additional training is necessary.

• Unique dual-element microphone measures the noise reduction of each earplug as worn by the worker across the wide range of industrial noise frequencies.



ADVANTAGE:

Objectively tests 7 frequencies (125 Hz - 8 kHz) in under 10 seconds per ear, so you don't rely on subjective test responses.

• Patented system and proprietary algorithms quickly analyze real-ear data to provide Personal Attenuation Rating (PAR) and fit variability.



ADVANTAGE:

PARs can assist in determining if the level of hearing protection your workers are getting is appropriate to their work environment.

STANDARD REPORT

Employee Name: John Employee
 Test Date: 11/3/2009 11:13:46 AM
 Company: 3M Company
 3M Center Building 235-2M-70, Saint Paul, MN, UNITED STATES, 55144-1000

TECHNICIAN INFORMATION

Last Name	First Name	Code	Software Version
User	John	USER0195	3.2.5.1
Serial number :	0303	Last Calibration :	3/03/2009

EXPOSURE LEVEL

A-Weighted Exposure Level (dB)	C-Weighted Exposure Level (dB)
90	Not Available

This report documents a Follow-Up that was Successful.

NOTES

TEST INFORMATION

	Left Ear	Right Ear	Binaural
Product	E-ARfit ClassicII	E-ARfit ClassicII	-
Size	Regular	Regular	-
PAR (dB)	28	29	29
Protection Sufficiency	Pass	Pass	Pass
Protected Exposure Level 20% (dBA)	-	-	56
Protected Exposure Level 80% (dBA)	-	-	67

The manufacturer of this attenuation measurement system recommends that an annual calibration be performed.

Documented Results.



Easy-to-understand test results are documented for each test subject, both in print and electronic formats, for future reference.

*Research suggests that many users will receive less noise reduction than indicated by the NRR due to variation in earplug fit. OSHA recommends that the NRR be reduced by 50% when comparing relative effectiveness of hearing protection devices and engineering noise controls.



3M™ E-A-Rfit™ Validation System

Technology That Takes Hearing Conservation to the Next Level.

Environmental controls, hearing protectors, and on-the-job training are the first steps to protecting your workers against noise-induced hearing loss (NIHL). Take the next step with the 3M™ E-A-Rfit™ Validation System, an objective, quantitative hearing protector fit-test system.

Fit Test Your Hearing Protectors.

Like respiratory fit testing, which indicates that maximum protection can only be obtained if the ideal fit is achieved, the E-A-Rfit system assists in achieving optimal fit through hearing protector selection and employee training. In less than 10 seconds per ear, the system generates a personal attenuation rating (PAR) that indicates a worker's noise reduction levels for a given fitting and hearing protector. Compare ratings across hearing protectors and fittings to determine best fit.

Get Objective, Personalized Results.

Researchers at E-ARCal Laboratory developed proprietary algorithms to analyze sound pressure inside earcanals. This in-the-ear testing procedure differs from many other systems on the market by providing quantitative data that does not rely on subject response. Fit, train, and motivate every worker using their Personal Attenuation Rating (PAR).



Look How Well It Fits Into Your Hearing Conservation Program

Integrating hearing protector fit testing into your hearing conservation program benefits everyone from new hires to high-risk workers.

Audit

- Establish baseline values for new workers
- Helps identify workers receiving inadequate protection that leaves them at risk of threshold shifts
- Validate high protection levels required by workers in high noise areas

Fit, Train and Motivate

- Provides tool for training proper insertion techniques and to assess proficiency
- Great for required refitting or retraining as required by OSHA after standard threshold shifts (STs) are detected.
- Motivates employees by helping them realize the control they have in protecting their hearing

Assess & Manage

- Improves long term performance of your hearing conservation program
- Indicates employees needing further fit training or alternative hearing protectors
- Input your noise exposure data and the E-A-Rfit software can help you identify the most appropriate hearing protector(s) and help minimize over/under protection



Put The E-A-Rfit System To Work.

The E-A-Rfit Validation System includes **FREE online training and user support.**

For more information and to see a video please contact your 3M sales representative or visit www.E-A-Rfit.com



PAR 28

PAR 25

PAR 17

3M™ E-A-Rfit™ Validation System Includes

Speaker and Stand
Dual-Element Microphones
USB Cable
Power Cable
Roll Model

*Trial Quantity of Probed Test Plugs
and Software

(Available via Online Download)

*Additional earplugs available for a nominal fee through your local safety distributor



Protection levels can be validated while wearing a variety of 3M branded hearing protectors including specially-probed versions of 3M branded foam and premolded earplugs.

PRODUCT CODE	PRODUCT	CASE QUANTITY	DESCRIPTION
393-1000	3M E-A-Rfit Validation System	(1) KIT	(1) Speaker & Stand, Dual-Element Microphones, (1) USB Cable, (1) Power Cable, (1) Roll Model, Trial Quantity of Probed Test Plugs, & Software (Available via Online Download)

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