

## RA4000

Digital High-Noise Headset

**Headsets: Vehicle Operations**



### **The RA4000 digital headset for best-in-class hearing protection and sound quality in harsh high-noise environments**

Racal Acoustics has engineered its RA4000 digital headset to address current operator requirements with state-of-the-art solutions in electronics, materials, and ergonomics in a product category that has typically relied on older technologies.

The RA4000 headset offers unprecedented performance in hearing protection, sound quality, reliability, and versatility, for outstanding overall value. As a complete solution, it offers modular, customisable, and upgradeable features and accessories to match specific mission requirements and extend useful life.



### **Features and Benefits**

- **High-noise attenuation**

The exceptional passive and active noise reduction features protect the hearing of users exposed to high levels of continuous noise.

- **Autonomous, battery-powered ANR**

Advanced digital active noise reduction (ANR) technology improves attenuation performance at low frequencies, providing better protection. Users enjoy this protection even when untethered from a communication system.

- **Local sound awareness and talk-through**

The electronic compression circuitry presents local environment sounds to the wearer at safe levels, so they are more aware of hazards and risks and can have face-to-face conversations without defeating the hearing protection. The output is electronically compressed so its level does not exceed a 85 dB(A) safety level. This capability remains effective during untethered use.

- **Adjustable neckband**

A fully adjustable neckband ensures consistent attenuation and comfort for extended durations.

- **Noise-cancelling boom microphone**

The removable noise-cancelling boom microphone makes clear radio communication possible in high-noise environments, and a respirator microphone can be attached.

- **Removable cables**

The interface cable can be detached from the headset earshell, allowing full hearing protection while untethered. Alternative cables can be attached to connect with other audio equipment.

- **Press-to-talk switch**

For convenience, the press-to-talk switch is ergonomically positioned on the headset.

- **Mechanical robustness**

The RA4000 headset's robust mechanical design and construction survive rough handling in harsh environments.

- **IP68 waterproofing**

Continuous outdoor use and exposure to wind and rain, snow, and ice are not a problem. The headset also withstands immersion in water.

- **Headset wearing options**

You can wear the RA4000 headset with a neckband or headband, or in a soft helmet liner for bump protection. The liner supports easy attachment of protective shells.

## Specifications

<b>Weight on Head</b>	650 g
<b>Napeband force (adjustable)</b>	12.2/14.5 N
<b>Communications Modes</b>	Binaural, monaural, programmable
<b>Frequency Response</b>	100 Hz to 10 kHz
<b>Input Impedance</b>	500 $\Omega$
<b>Input Range</b>	Programmable 0–5 V
<b>Comms Sensitivity</b>	Programmable up to 114 dB SPL
<b>Removable Boom Microphone</b>	150 $\Omega$ dynamic noise canceling, anti-magnetic, immersible
<b>Microphone Sensitivity</b>	Sensitivity –90 dB
<b>Microphone Output Range</b>	Programmable 0–1.5 V
<b>Active Noise Reduction (ANR)</b>	Advanced digital ANR, battery or external powered
<b>Binaural Talk-Through</b>	Digital compression to 85 dBA, battery or external powered
<b>PTT Switch</b>	3 positions, located on left earshell
<b>Talk-Through Volume Control</b>	Off/on, adjustable –6/0/+6/+12 dB
<b>Comms Volume Control</b>	Adjustable –6/0/+6/+12 dB
<b>External Power</b>	4.5 to 36 VDC, 1 W (3.5 W peak)
<b>Internal Power</b>	1 x AA 1.5 V cell, operation when untethered
<b>Interface Cable</b>	Detachable, configured and terminated to suit equipment requirements
<b>Compatibility</b>	Radios, intercoms, smart phones

## Environmental Tests EN60068, MIL-STD-810G

Certified to shock, bump, impact, vibration, dust, sand, humidity, mist, salt fog, driving rain, immersion, solar, altitude, fungal and fluid contamination.

<b>Operating Temperature</b>	– 40°C to + 65°C
<b>Storage Temperature</b>	– 57°C to + 71°C
<b>Immersion</b>	IP68, 1.1 metre for 2 hours
<b>Electromagnetic Conformity</b>	EN61000, MIL-STD-461F 50 V/m, EN55022, EN55024, ESD
<b>Safety</b>	EN60950-1
<b>Noise Attenuation</b>	EN352, ANSI S3.19, ANSI S12.42
<b>MTBF</b>	42,710 hours
<b>Approvals/Directives</b>	CE, LVD, RoHS, WEEE, PPE

## Attenuation – RA4000 Headset with Headband

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
<b>Mean Attenuation (dB)</b>	21.0	26.2	32.4	32.2	36.2	38.0	39.5	37.5
<b>Standard Deviation (dB)</b>	3.6	2.9	3.8	3.5	4.9	2.8	6.1	4.7

SNR = 34, H = 34, M = 31, L = 28, NRR = 29

## Attenuation – RA4000 Headset with Softliner with Neckband

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
<b>Mean Attenuation (dB)</b>	23.4	28.0	33.4	33.6	34.2	38.2	40.3	40.1
<b>Standard Deviation (dB)</b>	3.3	2.6	2.5	3.6	4.6	2.7	4.5	2.3

SNR = 34, H = 34, M = 31, L = 30, NRR = 29

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All specifications are subject to change without notice

The information contained herein is for reference only and does not constitute a warranty of performance

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