



Technical Data Sheet

LEVEL LIMITED HEADPHONES

54-437 Canford Level Limited Headphones, SONY MDR-7506 93dBa, wired stereo, 3.5mm jack & 6.35mm adapter

54-4051 Canford Level Limited Headphones SONY MDR7506 88dBa, wired stereo, 3.5mm jack & 6.35mm adapter

INTRODUCTION

Under Health and Safety regulations, employers are required to reduce the risk of damage to the hearing of employees from exposure to noise to the lowest level reasonably practicable. Noise is generally defined as unwanted sound and regulations concentrate on the control of noise. There are, however, sounds which are not unwanted - but can be at such a level, sometimes unwittingly, as to present a risk of exceeding an individual's daily personal noise exposure recommended level. Such a situation can arise from the use of headphones worn for long continuous spells whilst generating high sound levels. One BBC designed solution to this problem is the Headphone Limiter.

These small units are designed to protect headphone users from the effects of harmful sound levels. The units are powered from the incoming audio signal and may usually be set to limit the SPL in the range 85-110dBa. The BBC types are usually fitted in-line in the headphone cable.

Having gained experience in the supply and use of headphone limiters, a number of issues have been resolved which have enabled Canford to begin the introduction of popular types of broadcast use headphones with limiters built into the capsules.

The range has now been expanded to include the SONY MDR-7560 model. In order to distinguish this headphone from standard non-protected version, they are distinctively marked with the Canford Logo and limit level. Limit level is fixed at 93dBa or 88dBa (See notes 1 & 3). Because the limiter is within the capsule, it is possible to use spare replacement leads as for standard versions. All types utilize a 3m coiled OFC cord. As with in-line limiters, each headphone is individually calibrated, and as each capsule has its own individually calibrated limiter, spare limited capsules are available.

OPERATION

Once assembled, headphones equipped with the limiter are used as normal. The limiter will operate when the level of programme reaches a sustained level greater than that to which the limiter is set. The highest level at which the headphones may be sensibly used is with an average programme volume producing a sound level from the headphones of typically 6-8dB below the limiter setting (the figure will depend on the peak-to-mean ratio of the programme material). This has been designed into the circuitry and cannot be adjusted.

The limiter allows short-term peaks to pass through the limiter undistorted for maximum subjective effect. Nevertheless, excessive levels which may be damaging in the short term are clipped instantaneously. A network with a response similar to A-weighting is included in the side chain to allow higher levels of low frequencies to pass without operating the limiter.

NOTES

- 1 See Canford Audio data sheet 02-160 Earphone Limiters Questions and Answers.
- 2 Due to the enclosed circuitry, the sensitivity and presented impedance of these headphones is different from standard (non-limiting) versions.
- 3 Early units are marked 'Level Limited' with no dBa figure. These are limited to 93dBa.

Limiter manufactured under license from the BBC.



TECHNICAL SPECIFICATION

Type:	Closed
Frequency response:	10-20000Hz
Driver Units:	0mm diameter drivers
Input impedance:	63 ohms
Insertion Loss Due To Limiter:	< 1dB
Rated Power:	0.5W
Cord:	3m (extended length) coiled OFC type
Termination:	3.5mm stereo mini-jack plug (A-gauge adapter is also included)
Weight:	230g (without cord)