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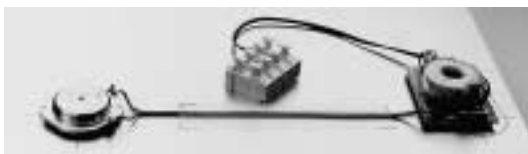
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NXT LOUDSPEAKERS

NXT is the name given to a new driver technology, developed in the UK, and licensed to manufacturers for use in a variety of applications from miniature devices used in laptop computers to full scale implementations for use in auditoria. The theory and concept is rather complex, and makes fascinating reading for the pure maths expert, but for those of us educated in less theoretical subjects we've attempted to give the simplest possible explanation of the NXT concept that does justice to its quite remarkable acoustic performance. Here goes!

Unlike the majority of traditional loudspeaker drivers, developed from the original designs of the late 19th century, which attempt to use a moving-coil motor to move a cone in a linear piston-like relationship with the driving signal, the NXT principle uses a driver to set up optimally distributed vibration modes throughout a panel, which vibrates in a non-coherent fashion across its entire surface. This contrasts with the essentially point-source nature of more familiar designs, (particularly as frequency rises), and is completely different to previous designs of flat panel moving-coil radiators. Traditional ceiling-tile style loudspeakers, essentially normal drivers optimised for extremely large, ultra low-profile cones, exhibit all the beaming and break-up problems of less than ideally stiff cones.

Since the vibration is non-coherent, the contributions from each side of the panel may be summed, and a baffle is not required. Whilst the output SPL of the device is slightly less than from a conventional unit measured on-axis, the NXT panel has an essentially non-directional radiation, largely independent of frequency, giving more uniform level distribution within the room than a point source. The radiation is completely diffuse at the panel surface, reducing beaming effects and destructive interference with room boundaries. As a result the effective loudness is greater than with a conventional unit in practical reflective environments, without reduction in intelligibility. This and the more linear relationship between SPL and proximity helps NXT systems to be less prone to feedback. Typical panels offer low-distortion, and are easy to drive, having a relatively-flat impedance curve.

Wharfedale LoudPanel Loudspeakers

Wharfedale's first implementation of the NXT concept: Loudspeaking ceiling tiles. Designed for medium level background music and announcements in offices, hotels, retail sites and public places, or for a cost-effective implementation of noise-masking, these tiles are similar visually to ceiling tiles. Suitable for use in suspended grids, these panel loudspeakers may also be used mounted in frames or free hanging at any angle. Available in three finishes, they may be spray-painted to match the environment. With light-weight decals or careful printing, the construction of "talking signs" is feasible. 100V line versions are fitted with a three-position tap switch. All models are supplied with terminal block connections. Note that whilst low impedance versions are nominally 6 ohm, the predominantly resistive impedance is more constant than with a nominal 8 ohm conventional driver, which can fall well below 6 ohm at certain frequencies and thus presents less load to the driving amplifier.

Application note:

Tiles simply "drop-in" suspended ceilings, but fixing must be compliant, using rubber pads supplied. (Note that this may be problematical in some environments where the air-pressure of a closing door may cause the whole ceiling to flex: the Loudpanel must not be fixed rigidly.) Performance is best when mounted more than 200mm from a solid surface. If closer, absorbent material should be used in the cavity.

Technical Specification:

Frequency range:	100Hz to 16kHz (mounted in suspended ceiling)
Sensitivity:	78dB SPL, 1mW @1metre, on-axis
Power Rating:	15W, 6 ohm types
	100V line versions tapped at 1.25, 2.5, 5 W
Dimensions:	595 x 595 x 30 (overall) mm
Fire rating:	UK Class 1

Development of this new technology continues apace and further implementations are likely to become available during the currency of this catalogue.

Technical Support will be able to provide details of the latest developments, which are expected, as this edition goes to press, to include framed, wall-mounting panels.

	£
76-611 WHARFEDALE LOUDPANEL Ceiling tile, plain white, 6 ohms	40.72
76-612 WHARFEDALE LOUDPANEL Ceiling tile, textured, 6 ohms	40.72
76-613 WHARFEDALE LOUDPANEL Ceiling tile, fissured, 6 ohms	40.72
76-621 WHARFEDALE LOUDPANEL Ceiling tile, plain white, 100V line	45.68
76-622 WHARFEDALE LOUDPANEL Ceiling tile, textured, 100V line	45.68
76-623 WHARFEDALE LOUDPANEL Ceiling tile, fissured, 100V line	45.68