

# U-14<sup>+</sup>

## Architectural and engineering specifications

The loudspeaker unit shall be of the two-way active type with integrated electronics, two direct-radiating 6.5" low/mid speakers in a vented enclosure and one 1.1" ferrofluid cooled soft-dome tweeter, optimized for high power handling.

The complete electronics shall be mounted on a chassis which is placed in the backside of the enclosure. Electronics shall consist of active filters to implement crossovers and equalization, protection circuitry and two power amplifiers. Filter section shall include a 'contour' filter push-push switch forming an integral part of the volume control potentiometer which enables the user to equalize the response in the mid frequency band centered around 800 Hz. Protection shall consist of a Dynamic Level Control (DLC) circuit that limits the dissipated mean power of the transducers to a safe value, an overload monitoring circuit that reduces the input gain by 11 dB if an input overload occurs, an amplifier DC protection circuit and a high chassis temperature protection circuit. A bi-color LED at the rear shall display the status of the 'contour' filter, the DC- and the temperature protection. The balanced signal input connector shall be a 3p female XLR type (p2 = +, p3 = -, p1 = gnd) and the full-range signal output link connector shall be a 3p male XLR type (hardwired to input connector). The mains connector shall be a male DO-3 type and the mains link connector shall be a female DO-3 connector. All connectors and controls shall be grouped together at the lower side of the chassis.

The enclosure shall be constructed of laminated birch plywood. It shall be equipped with eight ABS interlocking corners and four sockets for horizontal or vertical attachment of a U-bracket. The front of the enclosure shall be covered with open cell foam mounted on a protective perforated steel grill. The enclosure shall be finished with a polyurethane coating.

The complete loudspeaker unit shall meet the following criteria:

Frequency range of 70 - 20k Hz on axis (+/- 3 dB), max. SPL at 1m of 116 dB<sub>SPL</sub> continuous and 119 dB<sub>SPL</sub> peak, - 6 dB coverage angle of 110° horizontal by 100° vertical averaged 2k to 15k Hz. Dimensions are 19.1" (485 mm) H x 8.3" (210 mm) W x 8.1" (206 mm) D. Weight 29 lbs. (13 kg).

The loudspeaker unit shall be the AXYS model U-14<sup>+</sup>.

## Specifications<sup>1</sup>

### Acoustical<sup>2</sup>:

Frequency range <sup>3</sup>	: 70 - 20k Hz (+/-3 dB)
Max SPL (1m) <sup>4</sup>	- Continuous : 116 dB
	- Peak : 119 dB
Coverage angle <sup>5</sup>	: 110° H x 100° V
Self generated noise SPL (A-weighted, 1m)	: 18 dB

### Electrical:

Input	- Sensitivity (100 dB <sub>SPL</sub> /1m)	: -16 dBu
	- Impedance (balanced)	: 10k Ω
	- Connector (XLR female type)	: p2=+, p3=-, p1=gnd
Link		: hardwired to input
Cross-over	- Type	: 24 dB/Oct
	- Frequency (-6 dB)	: 3k5 Hz
	- Controls	: contour filter switch and volume control
Power amplifiers <sup>4</sup>		: 150 W <sub>rms</sub> (4 ###) LF, 100 W <sub>rms</sub> (8 ###) HF
Protection	- DLC	
	- Overload	: 11 dB gain reduction
	- Thermal	: 11 dB gain reduction if T <sub>heatsink</sub> > 72° C
	- DC	: mute if T <sub>heatsink</sub> > 80° C
Indicator LED - green		: contour filter off
	- red	: contour filter on
	- flash	: start-up / thermal and DC-protection mute
Mains	- Voltage (+5/-10 %) <sup>6</sup>	: 230 V
	- Connector type	: DO-3 male and DO-3 female link
	- Fuses (slow type)	: 1 x 1.6 A
	- Power consumption	: 17 W <sub>idle</sub> / 120 W <sub>full load</sub>

### General:

Temperature range (ambient)	: 0 - 40° C
Transducers	: 2 x 6.5" / 1 x 1.1" soft-dome tweeter
Dimensions including corners (H x W x D)	: 485 x 210 x 206 mm
Weight	: 13 kg

### Notes:

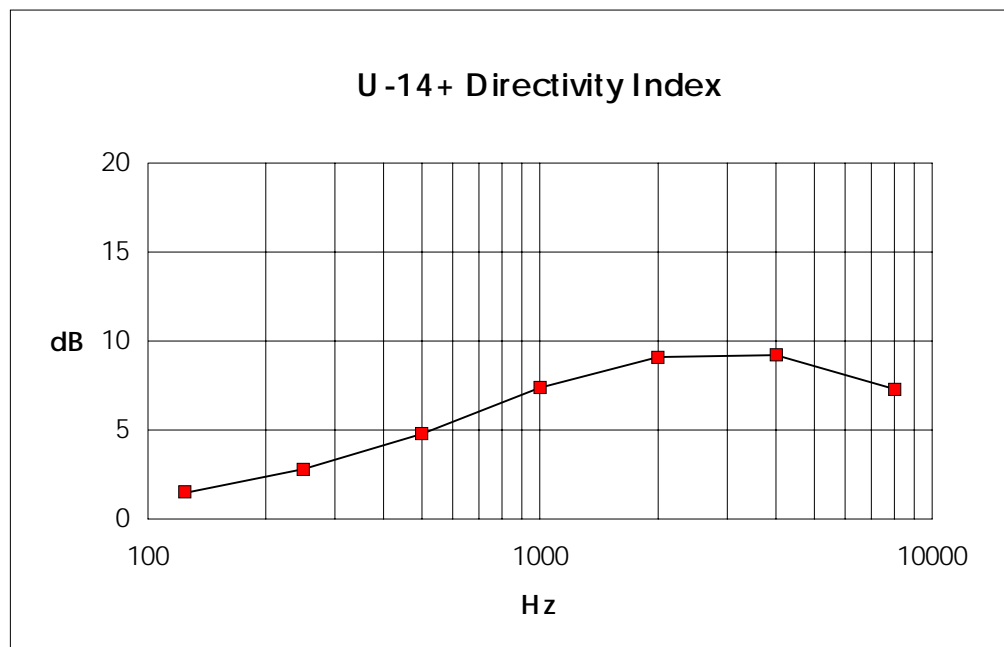
- 1 Specifications are valid for 1 unit with 'contour' filter off (green LED) and volume at max position unless stated otherwise.
- 2 Measured under anechoic 'full-space' conditions unless stated otherwise.
- 3 Low cut-off frequency 'full-space', 'contour' filter on.
- 4 Measured with gated sine waves.
- 5 -6 dB, average value 2k - 15k Hz.
- 6 Other voltages available upon request.

### Acoustical data table

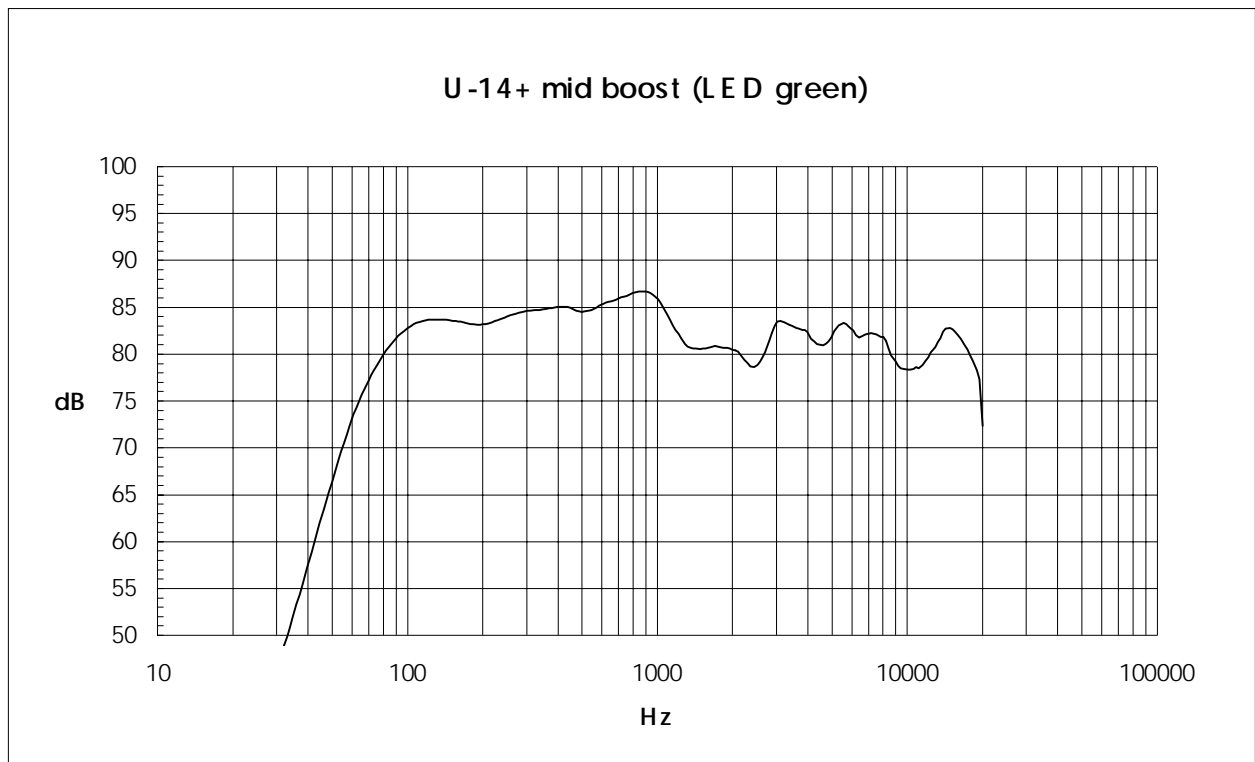
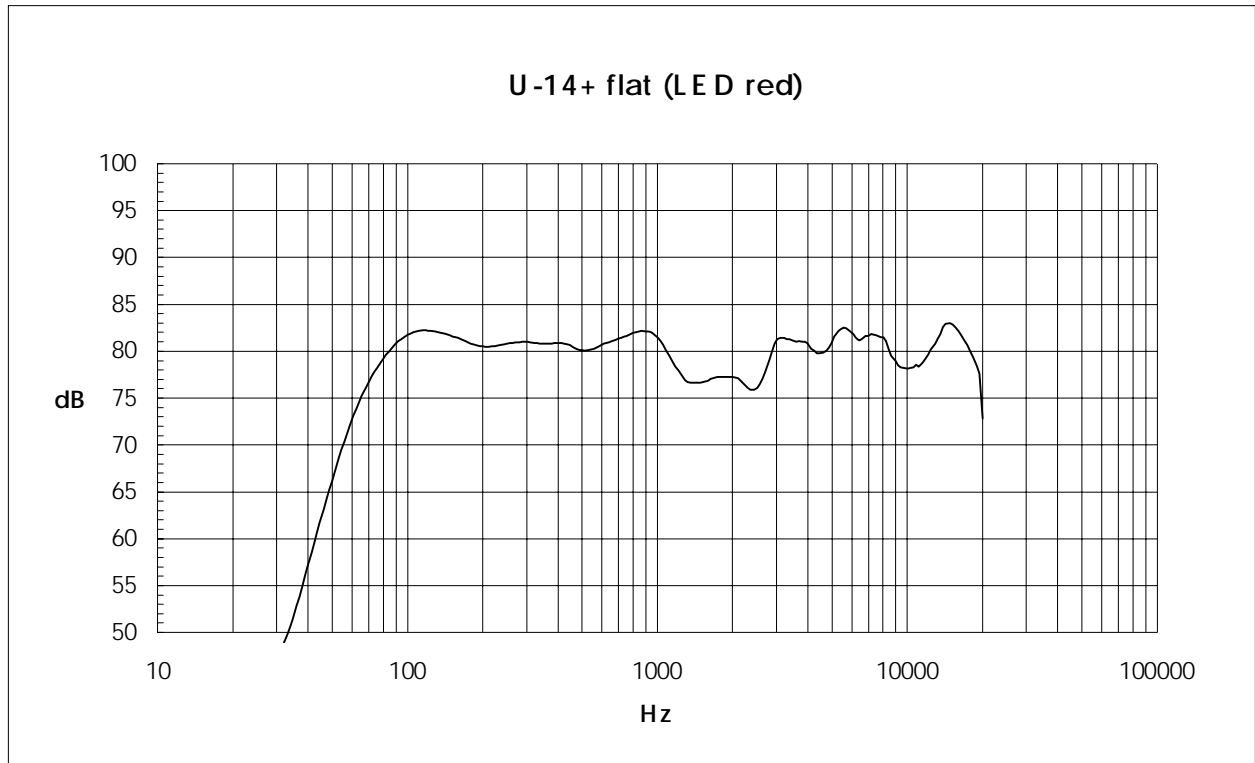
Frequency <sup>1</sup> (Hz)	DI <sup>2</sup> (dB)	Hor. coverage - 6 dB (deg)	Vert. coverage - 6 dB (deg)	Max. SPL at 1m <sup>3</sup> (dB <sub>SPL</sub> )
125	1.5			114
250	2.8		220	117
500	4.8	220	130	119
1k	7.4	175	65	119
2k	9.1	105	115	117
4k	9.2	110	80	119
8k	7.3	130	120	111

1. All frequencies octave band centered, all values measured with 'contour' filter off (green LED) and volume at max position.
2. Directivity Index calculated from horizontal and vertical polar data.
3. Peak values measured with gated sine waves under anechoic conditions, scaled to 1m ETC time zero.

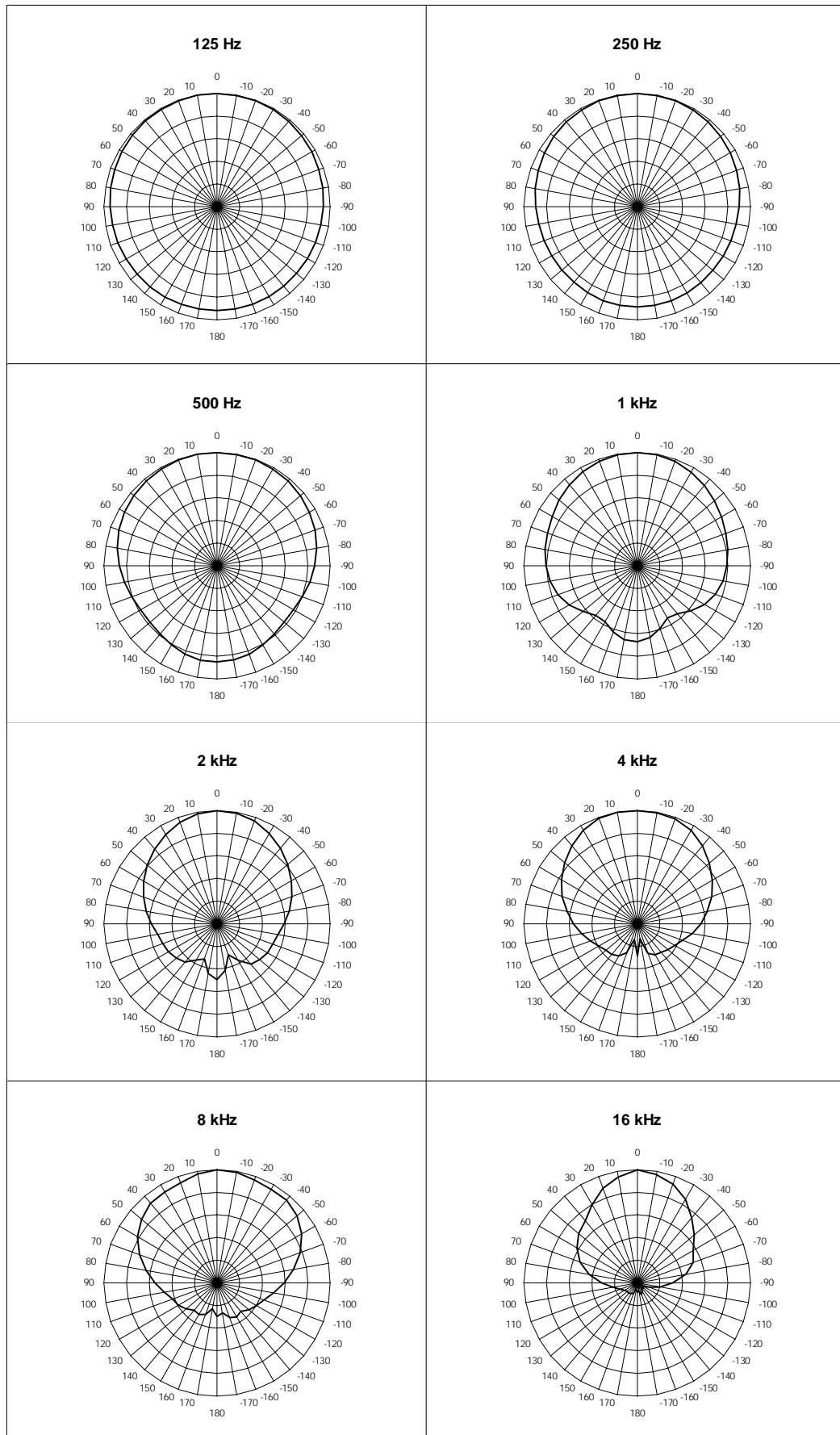
### Directivity Index



**SPL response**

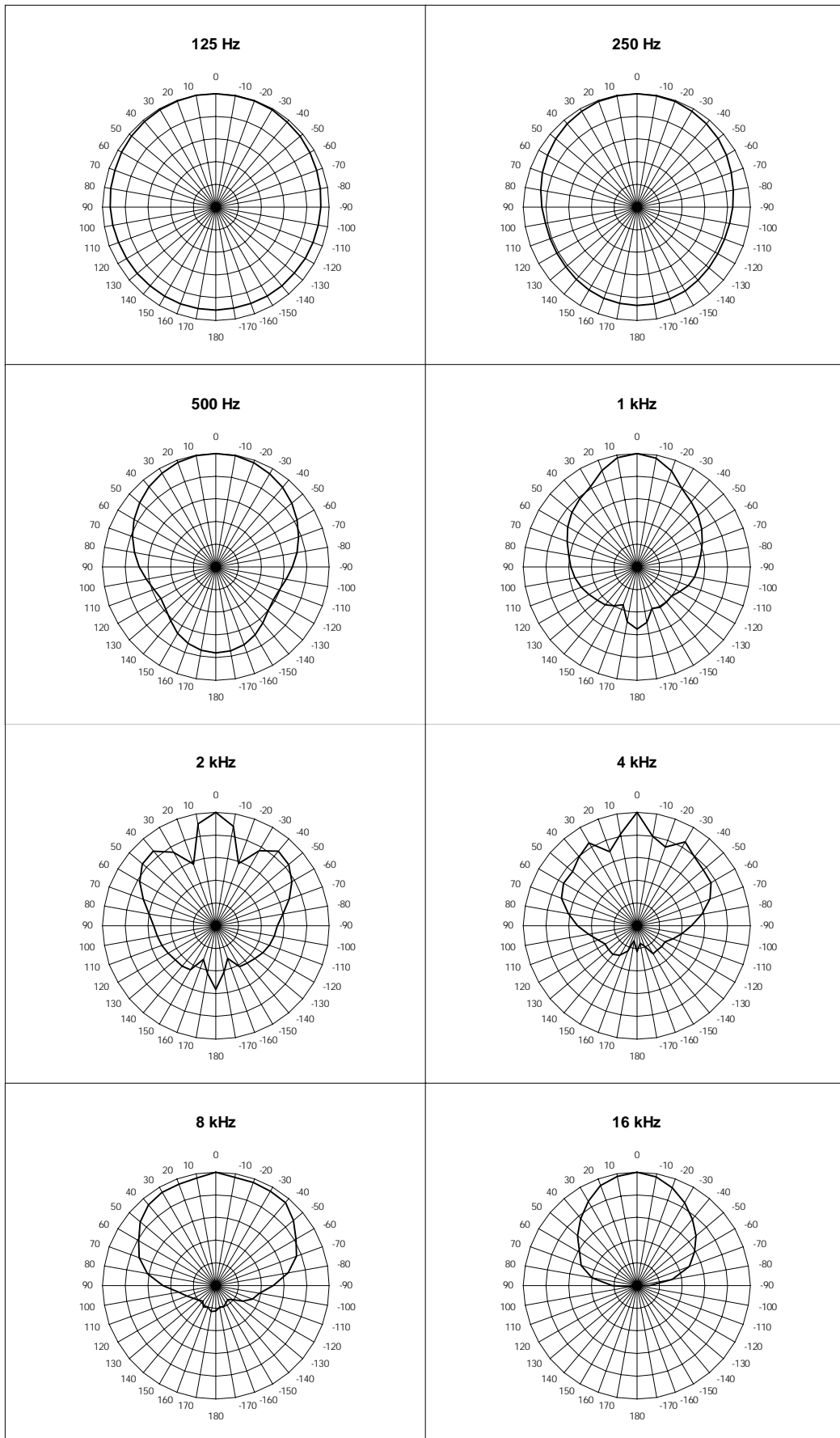


**U-14+** Full space on axis SPL, 1/3 octave averaged  
 Distance 4.0 m, input level 0.05 Vrms  
 Low end (<200 Hz) from near field measurements



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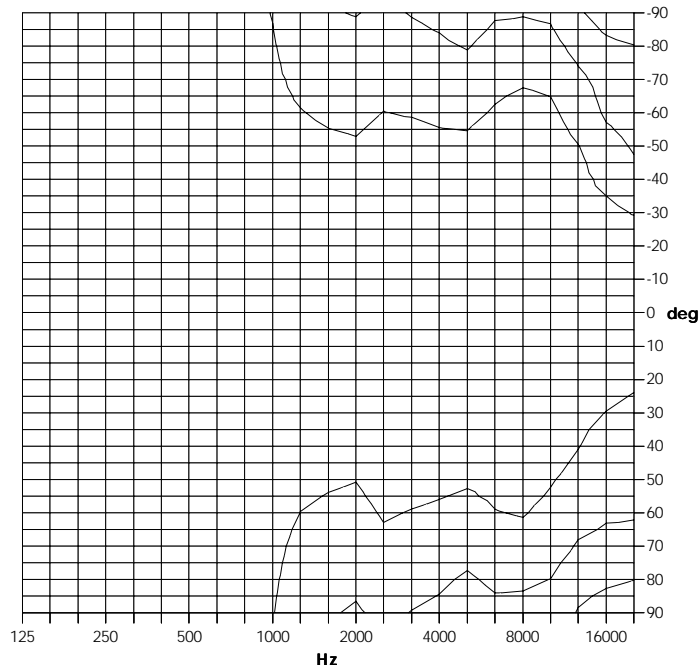
Horizontal polar data 1/1 octave averaged  
Angular resolution 10 deg, scale 6 dB/div, positive angles = right side



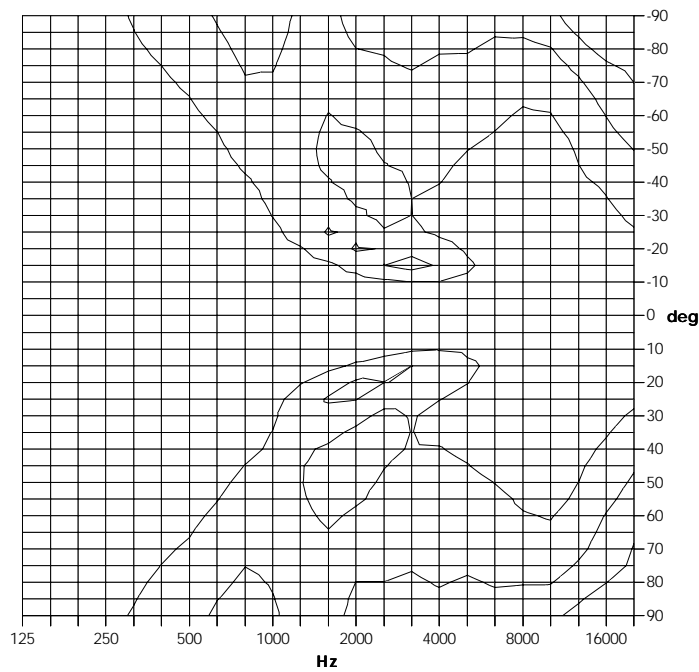
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Vertical polar data 1/1 octave averaged  
Angular resolution 10 deg, scale 6 dB/div, positive angles = top side

**U-14+ horizontal isobaric curves**

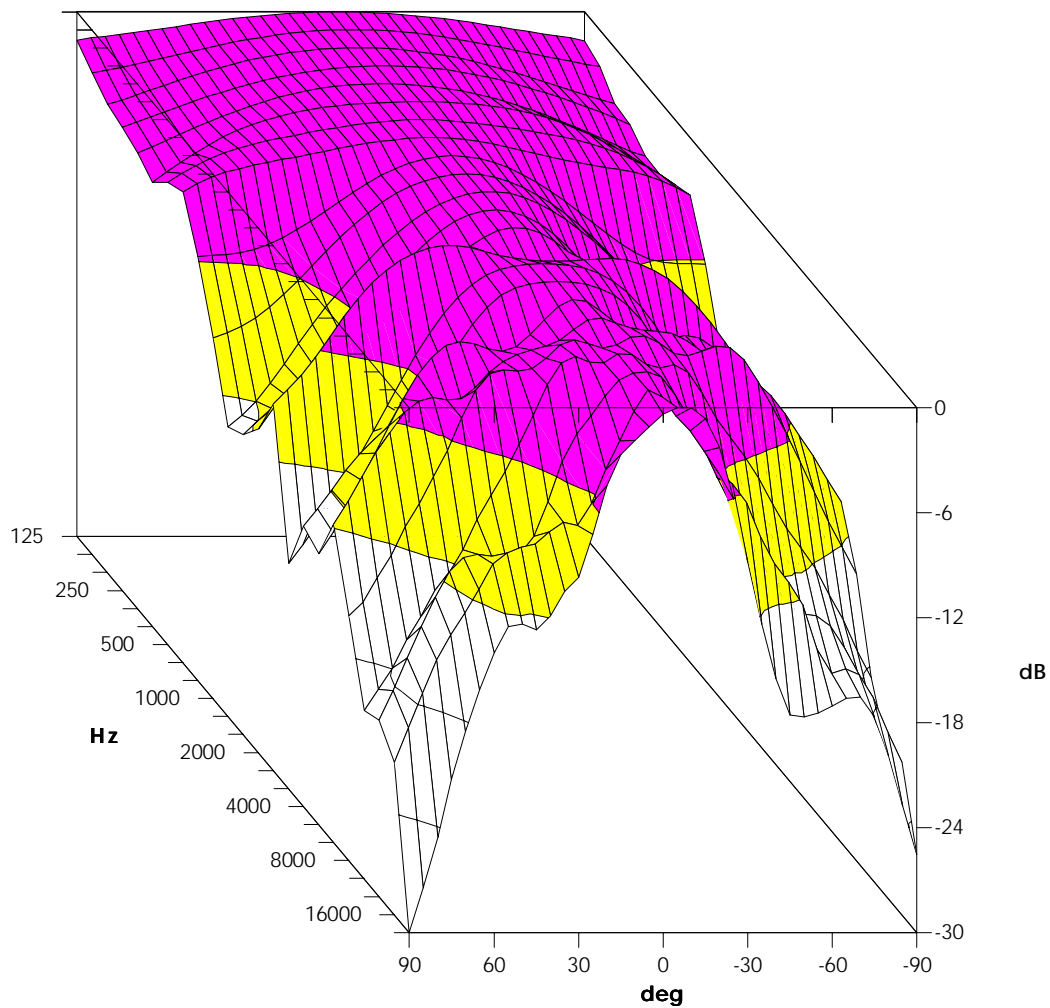


**U-14+ vertical isobaric curves**



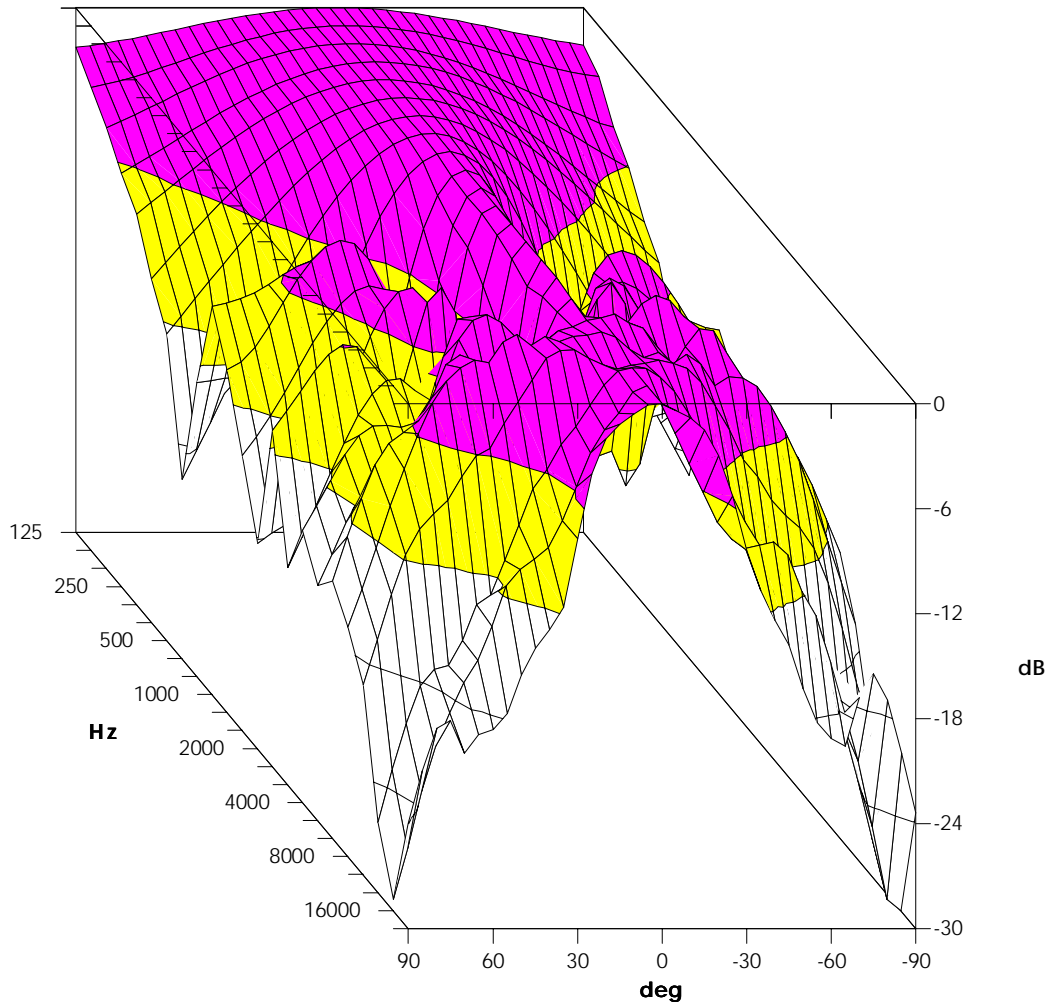
U-14+ Isobaric curves 1/1 octave averaged -6, -12 and -18 dB

U-14+ horizontal 3-D graph



U-14+ Horizontal 3-D graph 1/3 octave averaged

U-14+ vertical 3-D graph



U-14+ Vertical 3-D graph 1/3 octave averaged