

UFM-215

Architectural and engineering specifications

The loudspeaker unit shall be of the two-way active type with integrated electronics, one direct-radiating 15" low/mid speaker in a vented enclosure and one 2" ferrofluid cooled driver with carbon-fiber diaphragm. A specially developed horn made of fiberglass reinforced epoxy shall be mounted on the driver. The horn shall have an exponential area increase and a constant directivity over a wide frequency range.

The complete electronics shall be mounted on a chassis which is placed at the side of the enclosure. Electronics shall consist of active filters to implement crossovers and equalization, protection circuitry and two power amplifiers. An all pass filter for alignment of the acoustical centers of the transducers shall be part of the filter section. Protection shall consist of two Dynamic Level Control (DLC) circuits that limit the dissipated mean power of the transducers to a safe value, DC protection on each of the amplifier outputs, high chassis temperature and high voltage on the mains supply. A LED on the front and rear side shall display the status of all protection circuits. The balanced signal input connector shall be a 3p female XLR type (p2 = +, p3 = -, p1 = gnd), 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 type. All connectors shall be grouped together at the upper side of the chassis.

The enclosure shall be constructed of laminated birch plywood. The enclosure shall be shaped as a floor monitor with a floor to baffle angle of 42°. It shall be equipped with one handle, six ABS interlocking corners and non-skid aluminum framed profile on the bottom side. 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 46 - 18k Hz on axis (+/- 3 dB), max. SPL at 1m of 125 dB_{SPL} continuous and 135 dB_{SPL} peak, - 6 dB coverage angle of 60° horizontal by 50° vertical averaged 1k to 15k Hz. Dimensions are 25.0" (634 mm) H x 18.3" (464 mm) W x 16.3" (414 mm) D. Weight 86 lbs. (39 kg).

The loudspeaker unit shall be the AXYS model UFM-215.

Specifications¹

Acoustical²:

Frequency range ³	:	46 - 18k Hz (+/-3 dB)
Max SPL (1m) ⁴	- Continuous	: 125 dB
	- Peak	: 135 dB
Coverage angle ⁵	:	60° H x 50° V
Self generated noise SPL (A-weighted, 1m)	:	27 dB

Electrical:

Input	- Sensitivity (100 dB _{SPL} /1m)	: -20 dBu
	- Impedance (balanced)	: 20k Ω
	- Connector (XLR female type)	: p2=+, p3=-, p1=gnd
Link		: hardwired to input
Cross-over	- Type	: 24 dB/Oct with transducer alignment
	- Frequency (-6 dB)	: 1k2 Hz
Power amplifiers ⁴		: 2 x 210 W _{rms} (8 ###)
Protection	- DLC	: multi band
	- Thermal	: T _{heatsink} > 80° C
	- Mains voltage guard	: over / under voltage
	- DC per amplifier	
Mains	- Voltage (+5/-10 %) ⁶	: 230 V
	- Connector type	: DO-3 male and DO-3 female link
	- Fuses (slow type)	: 1 x 3.15 A and 1 x 100 mA
	- Power consumption	: 30 W _{idle} / 300 W _{full load}

General:

Temperature range (ambient)	:	0 - 40° C
Transducers	:	1 x 15" / 1 x 2" horn loaded
Dimensions (H x W x D)	:	634 x 464 x 414 mm
Weight	:	39 kg

Notes:

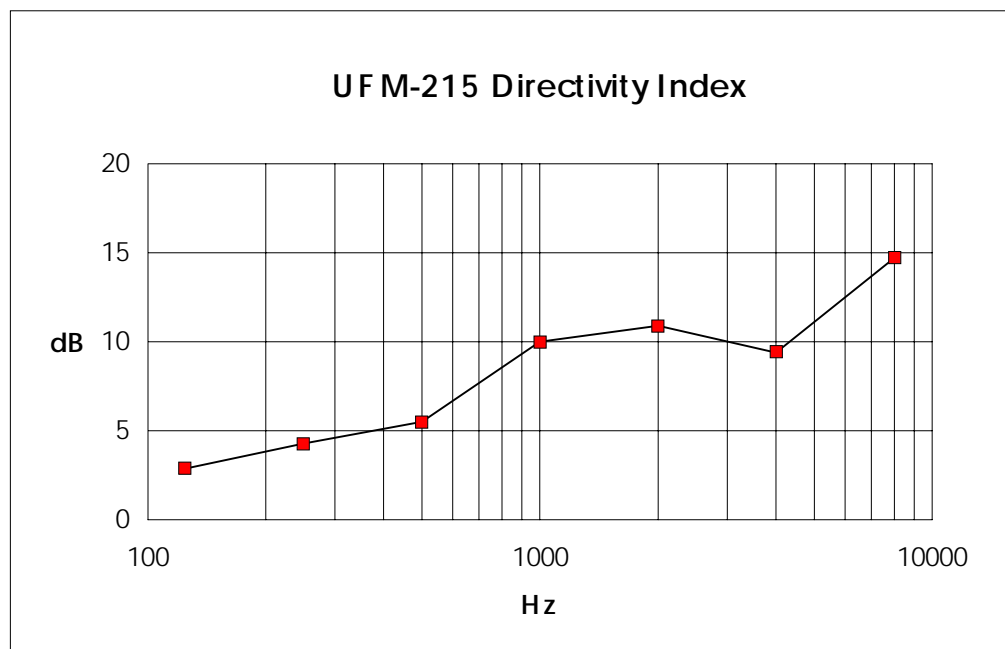
- 1 Specifications are valid for 1 unit unless stated otherwise.
- 2 Measured under anechoic 'full-space' conditions unless stated otherwise.
- 3 Low cut-off frequency 'half-space'.
- 4 Measured with gated sine waves.
- 5 -6 dB, average value 1k - 15k Hz.
- 6 Other voltages available upon request.

Acoustical data table

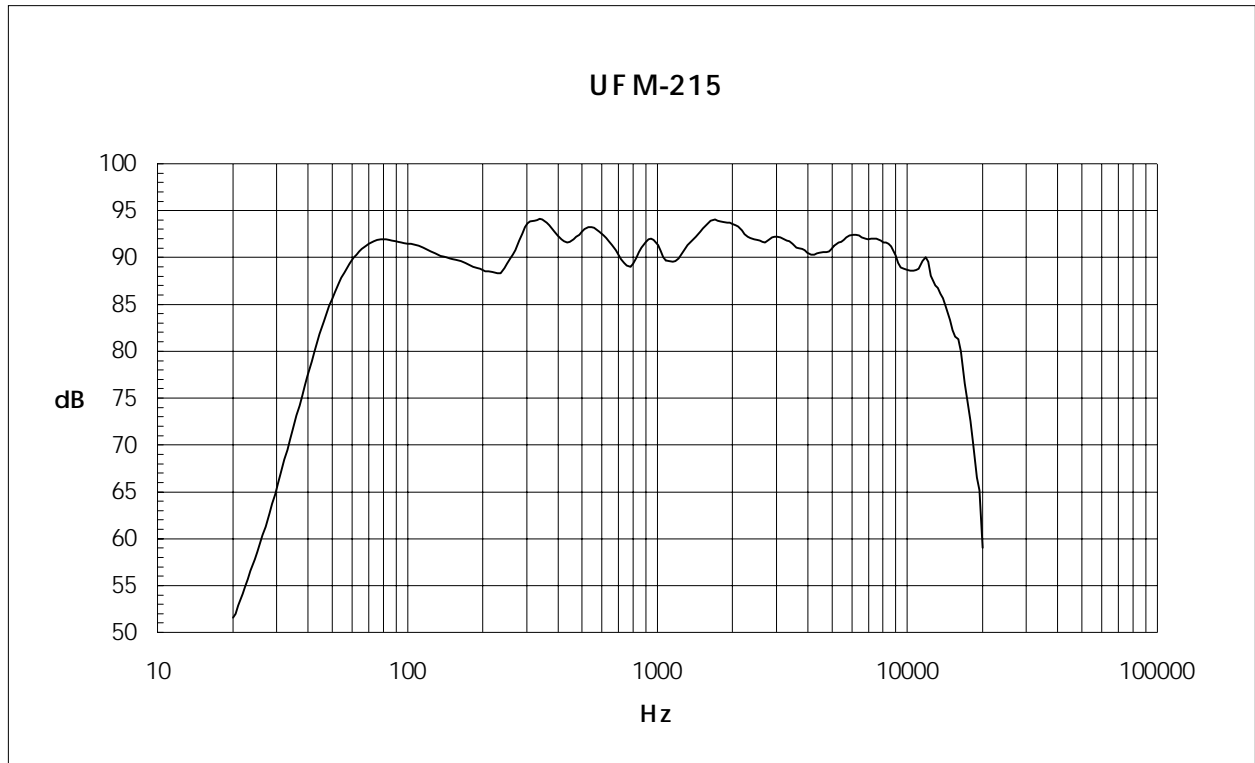
Frequency ¹ (Hz)	DI ² (dB)	Hor. coverage - 6 dB (deg)	Vert. coverage - 6 dB (deg)	Max. SPL at 1m ³ (dB _{SPL})
125	2.9			120
250	4.3	190	175	122
500	5.5	165	160	124
1k	10.0	78	65	130
2k	10.9	65	75	135
4k	9.4	76	80	132
8k	14.7	54	38	130

1. All frequencies octave band centered.
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.

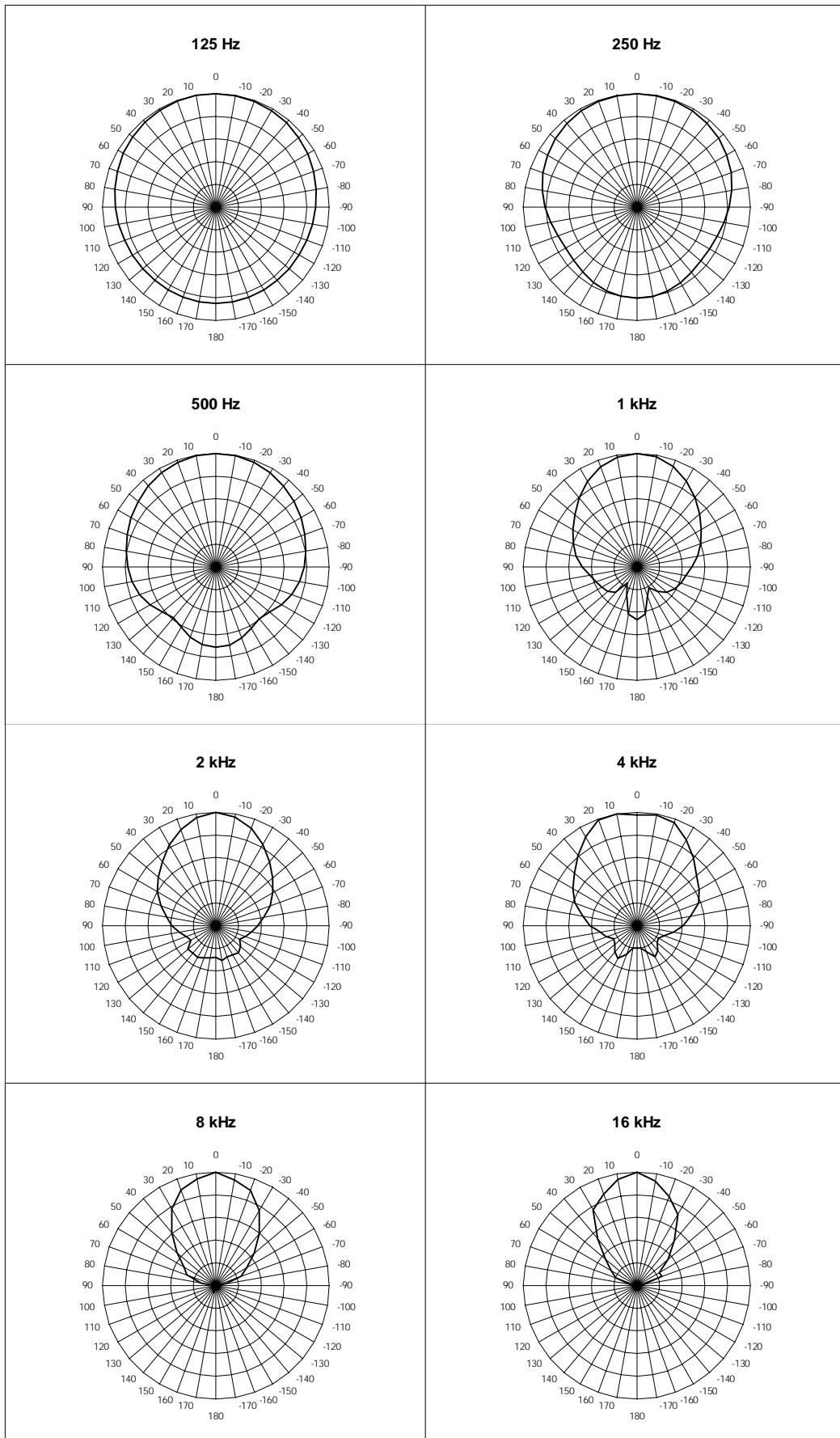
Directivity Index



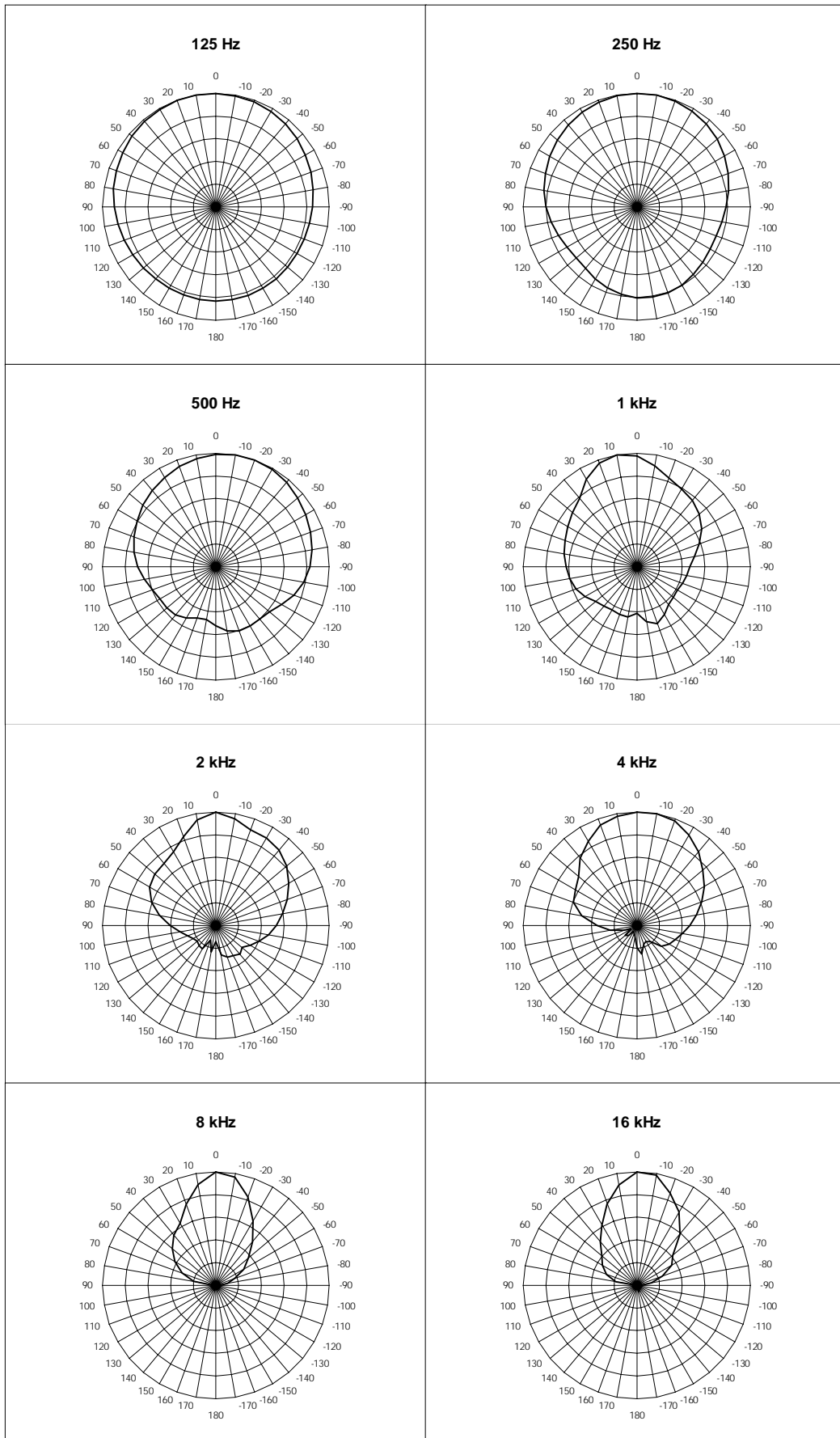
SPL response



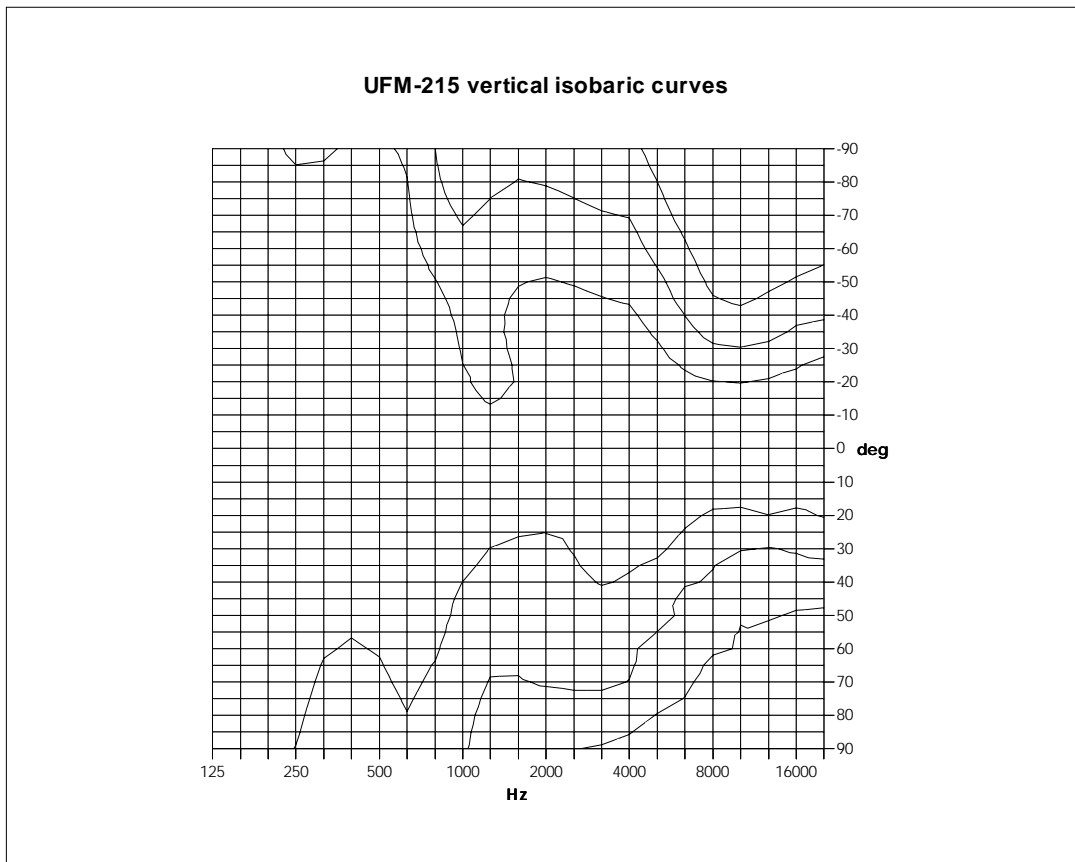
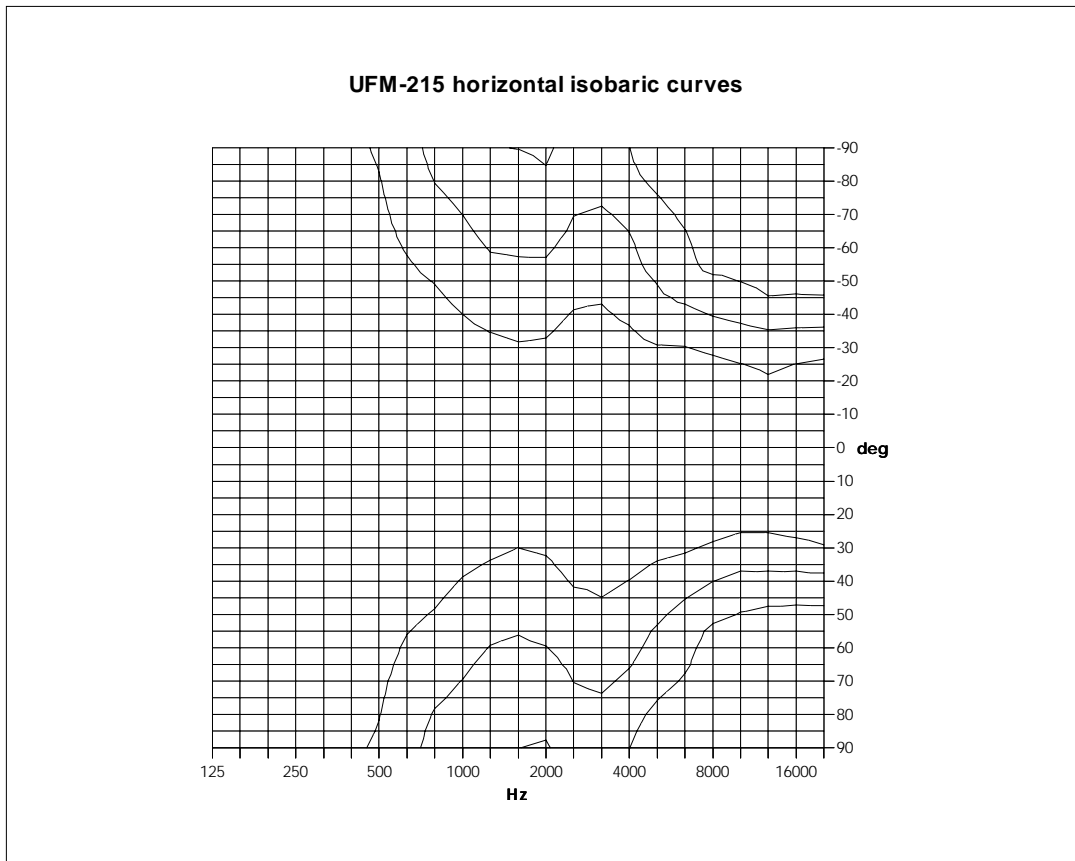
UFM-215 Full space on axis SPL, 1/3 octave averaged
 Distance 4.0 m, input level 0.1 Vrms
 Low end (<90 Hz) from near field measurements



UFM-215 Horizontal polar data 1/1 octave averaged
Angular resolution 10 deg, scale 6 dB/div, positive angles = left side

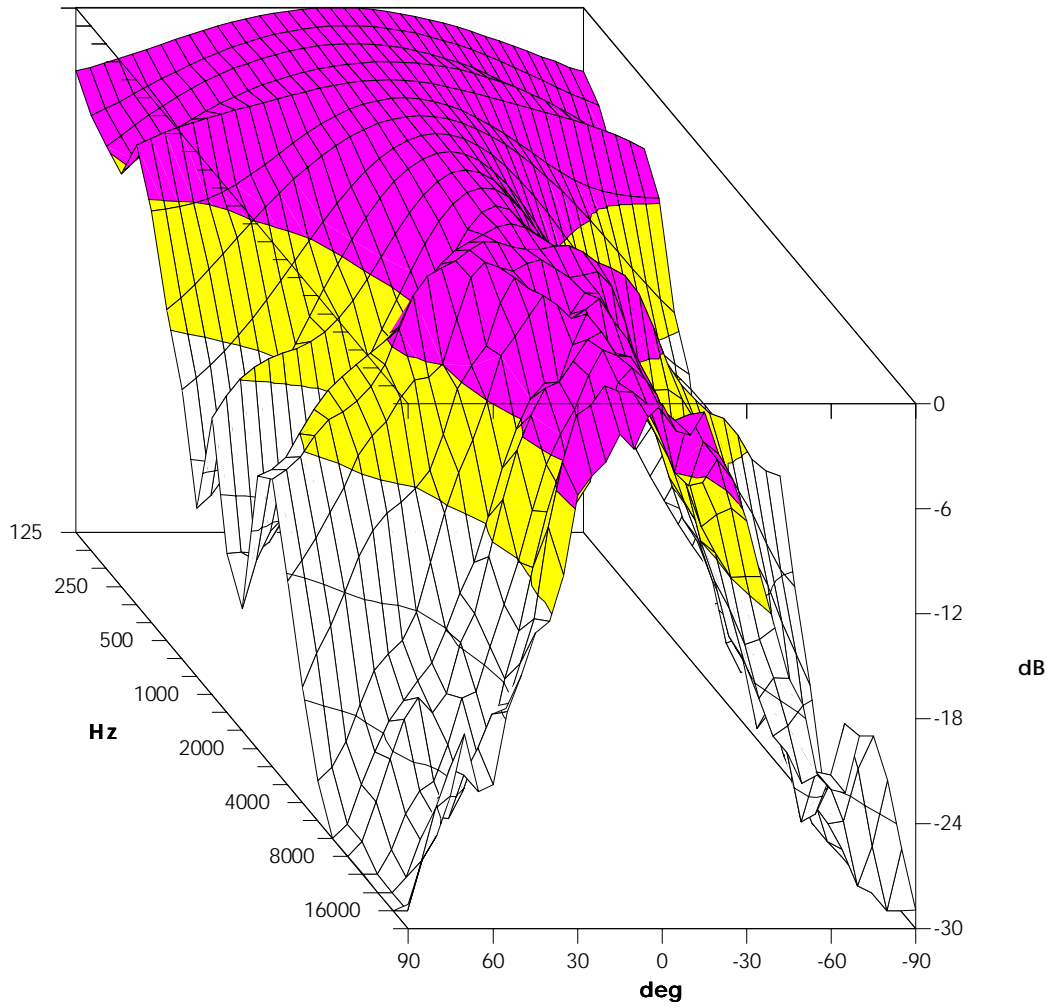


UFM-215 Vertical polar data 1/1 octave averaged
Angular resolution 10 deg, scale 6 dB/div, positive angles = top side



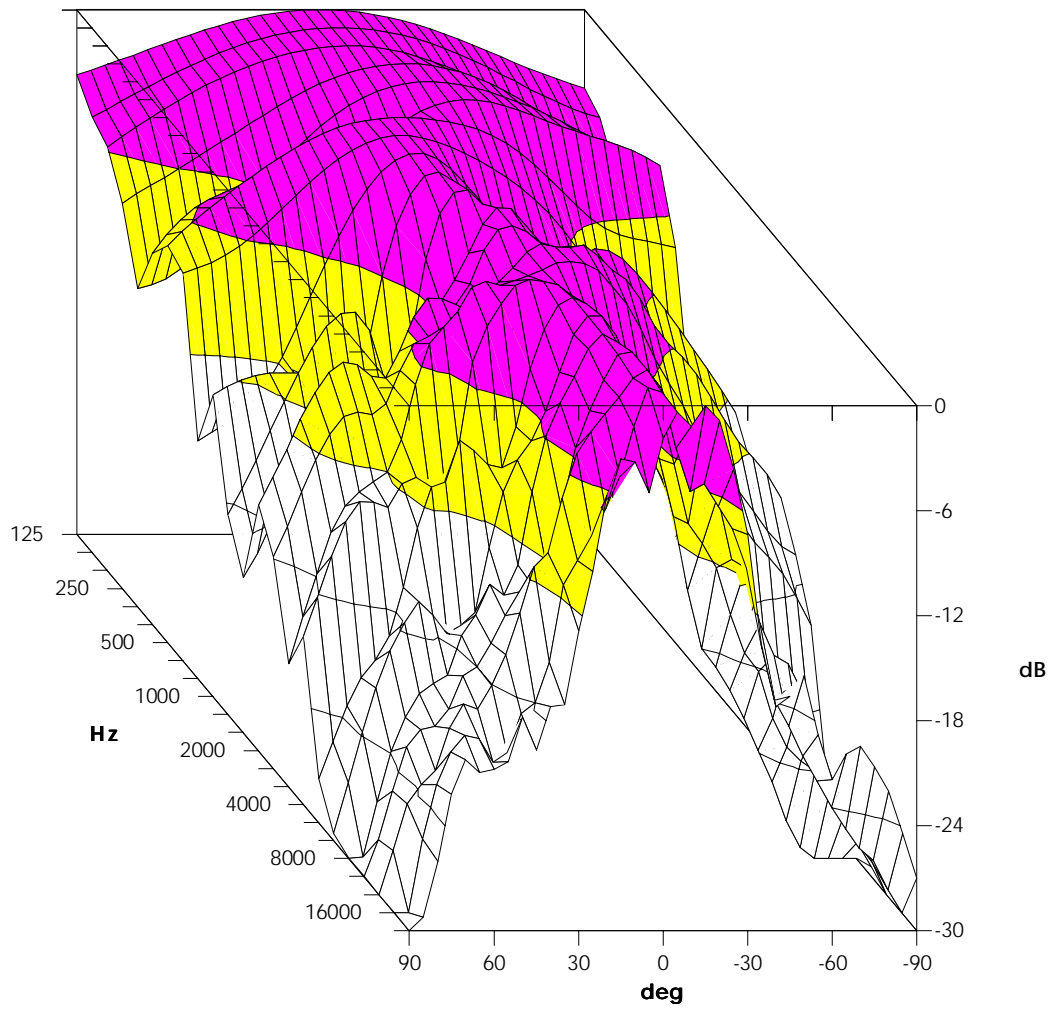
UFM-215 Isobaric curves 1/1 octave averaged -6, -12 and -18 dB

UFM-215 horizontal 3-D graph



UFM-215 Horizontal 3-D graph 1/3 octave averaged

UFM-215 vertical 3-D graph



UFM-215 Vertical 3-D graph 1/3 octave averaged