

# Aspen 6

*In-Ceiling Speaker*

**100 W**

POWER RMS

**87 dB**

SENSITIVITY

**8  $\Omega$**

IMPEDANCE

**107.95 mm**

DEPTH

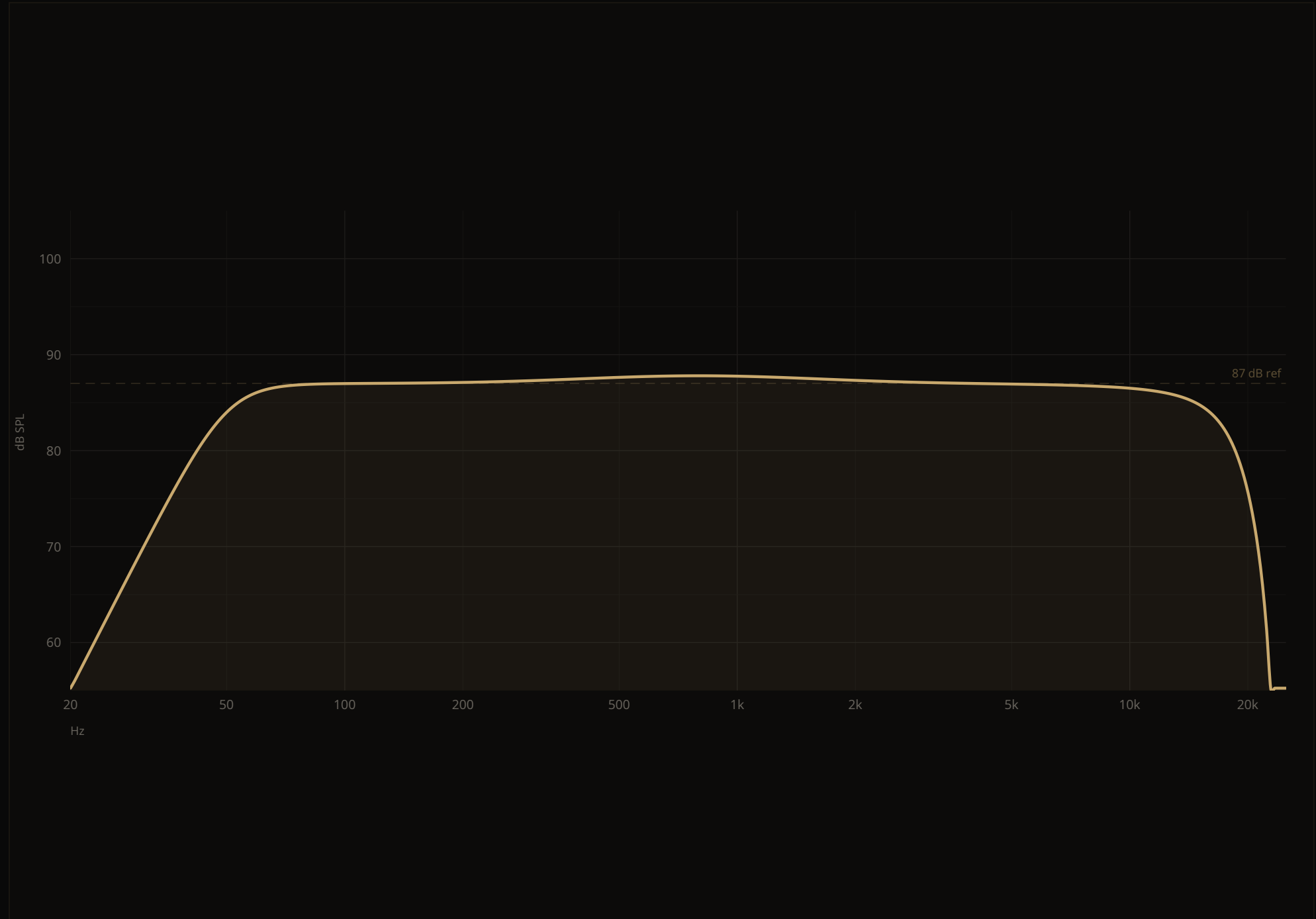
# Technical Specifications

| ACOUSTIC PERFORMANCE |                                    |
|----------------------|------------------------------------|
| Power RMS            | 100 W                              |
| Power Peak           | —                                  |
| Sensitivity          | 87 dB / 1W / 1m                    |
| Impedance            | 8 Ω                                |
| Max SPL              | 108 dB                             |
| THD+N                | ≤0.2% @ 1W/1m                      |
| Frequency Range      | 50 Hz – 22 kHz ±3dB                |
| Directivity H        | 110° (–6 dB, 1 kHz)                |
| Directivity V        | 110° (–6 dB, 1 kHz)                |
| Driver Config        | 1 × 6 inch Graphite Cone Woofer    |
| Crossover            | Built-In Passive Crossover (2-way) |
| Crossover Freq       | 80 Hz (rec.)                       |
| EQ Profile           | Default                            |
| CONNECTIVITY         |                                    |
| Connector            | —                                  |
| Wire Gauge           | 14 AWG or thinner                  |

| PHYSICAL         |                                        |
|------------------|----------------------------------------|
| Dimensions       | 248.4 mm                               |
| Weight           | 1.9 kg                                 |
| Housing          | ABS                                    |
| Grille           | Mild Steel                             |
| Paintable Grille | Yes                                    |
| ENVIRONMENTAL    |                                        |
| IP Rating        | —                                      |
| Mounting         | —                                      |
| COLOUR & FINISH  |                                        |
| Finishes         | White · Custom RAL                     |
| PRODUCT          |                                        |
| Series           | In-Ceiling Series                      |
| SKU              | XSP-IC-AS6                             |
| Variants         | XSP-IC-AS6-W · White   Custom RAL +20% |
| Since            | 2022                                   |

# Frequency Response

On-axis · 1W / 1m · anechoic · 50Hz - 22kHz  $\pm 3$ dB · 87dB sensitivity · raw acoustic, no EQ



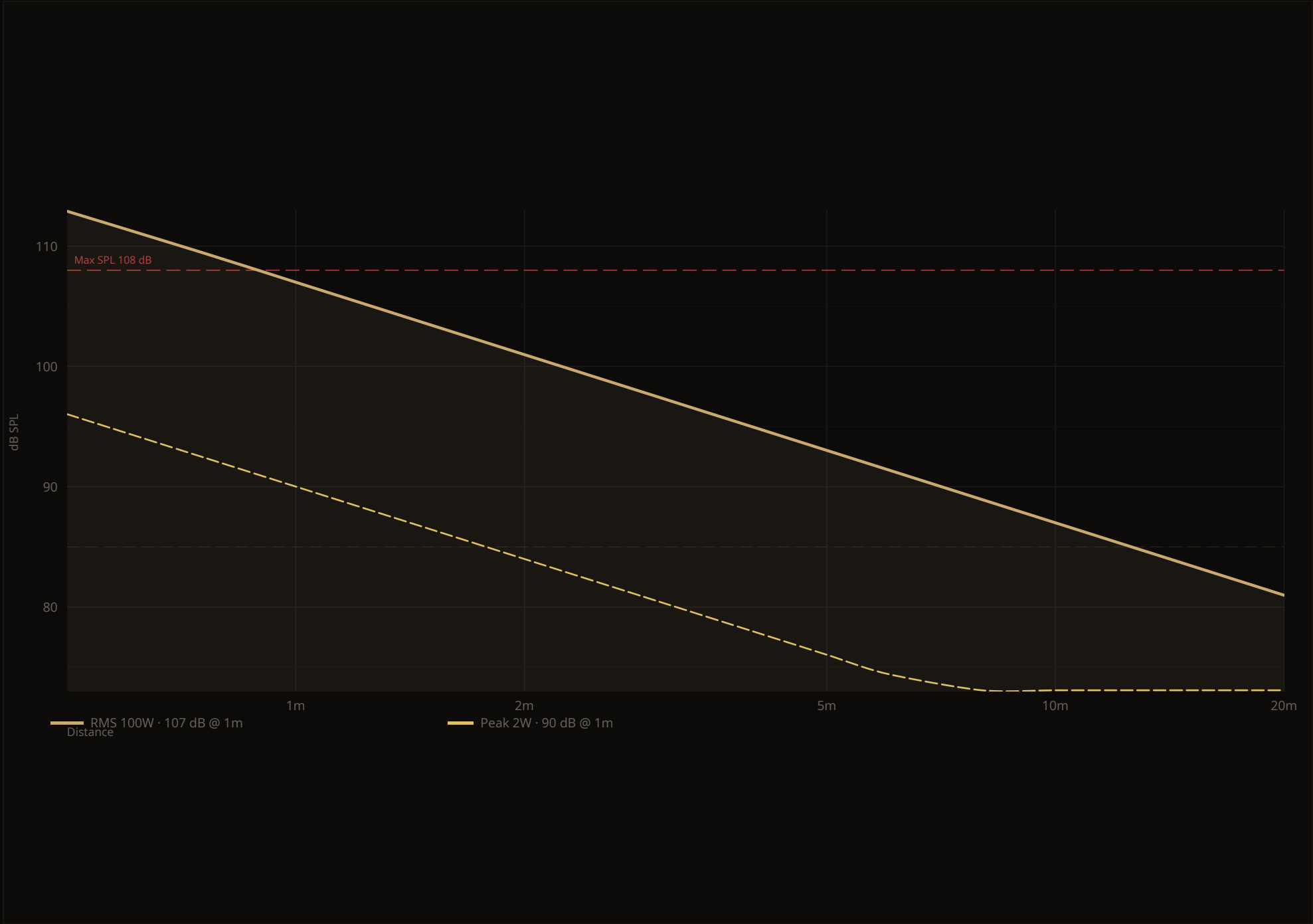
# Directivity Pattern

Normalised polar response · H 110° / V 110° at -6 dB · 1 kHz · multi-frequency overlay



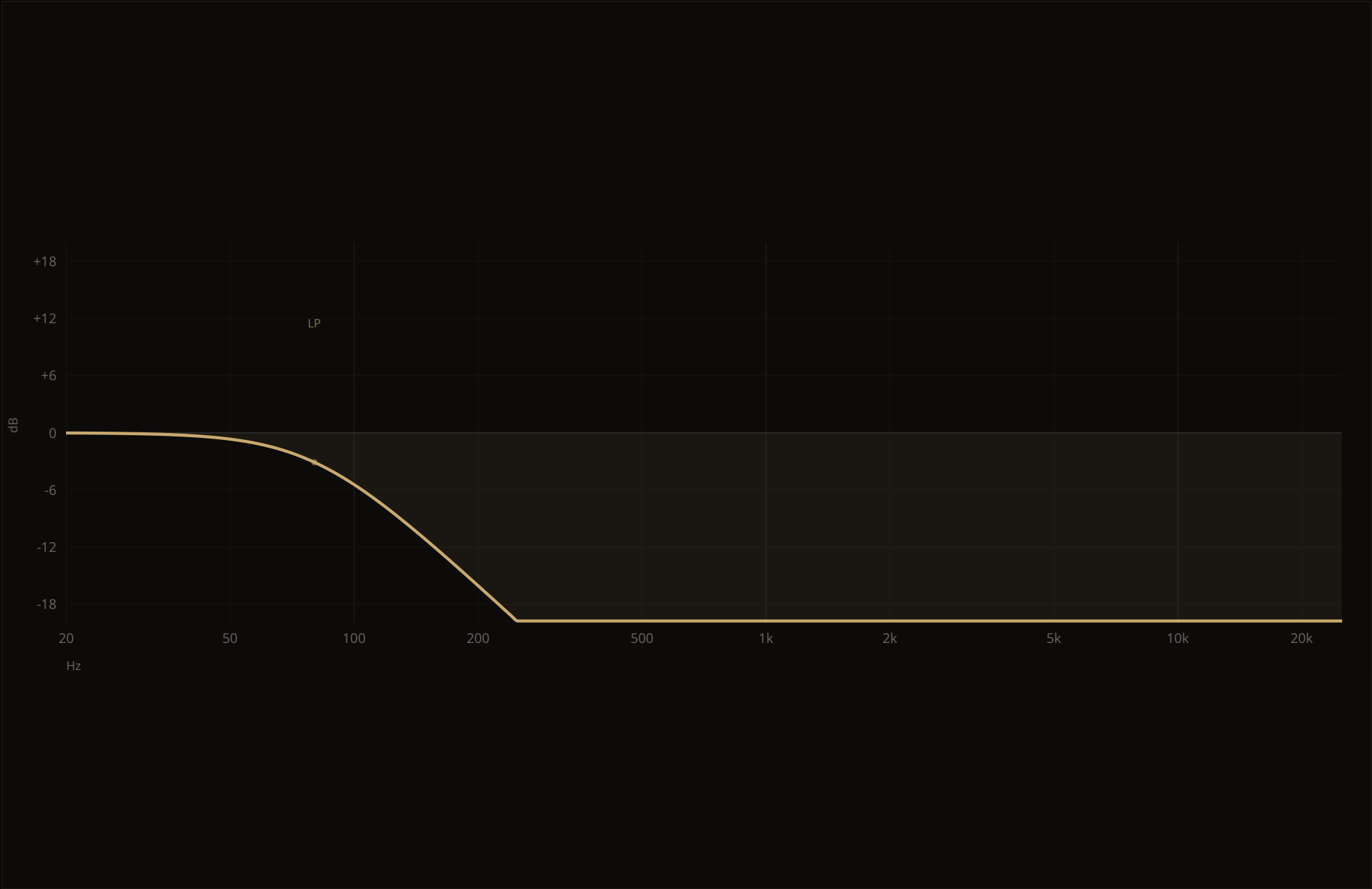
# SPL vs Distance

Inverse square law · Ref: 87 dB / 1W / 1m · free field anechoic · 100W RMS / nullW Peak



# Recommended EQ

Profile: Default · combined biquad cascade (bold) with individual filter contributions (dashed)



| # | TYPE | FREQUENCY | GAIN | Q   |
|---|------|-----------|------|-----|
| 1 | LP   | 80 Hz     | -12  | 0.7 |

Profile: Default · RBJ biquad cascade · fs = 48 kHz (ADAU1701 DSP)

# Proprietary Technologies



## PsySculpt

ADAU1701 DSP implementing Fletcher-Munson equal-loudness compensation. Pre-Comp Loudness L&H Post-Comp Log-Decay Peak Detector Dynamic Bass DAC. Tonal balance stays consistent from background levels to concert SPL.



## XS-Flow

Micro-waveguide geometry precision-machined into the enclosure interior. Channels the rearward acoustic wave around the magnet structure, reducing compression and harmonic distortion at high excursion.



## Nano Resonance

Intentionally heavy cone mass forces the natural resonant frequency well below the target passband — genuine low-frequency extension from an enclosure only 12–23 mm deep, defying Hoffman's Iron Law.



## PrecisionXover Array

Air-core inductors, polypropylene film capacitors and metal-film resistors. Component matching held to  $\pm 0.5$  dB for inaudible channel-to-channel variation across the array.



## AeroFrame Chassis

6061 aerospace aluminium machined as the structural chassis, acting as a passive heatsink drawing heat away from the voice coil through direct thermal coupling — no fans, no thermal compression.



## PowerDense Dynamics

Copper-silver composite voice coil conductor. Significantly higher continuous power in the same former diameter — higher thermal ceiling without increasing coil mass or inductance.