Filter Wizard

Filter Wizard Design

Created on 11/02/2025

ANALOG DEVICES

Filter Wizard Design Report

Filter Requirements for Low-Pass, 3rd order Chebyshev

Specifications: Optimize: Specific Parts; +Vs: 5; -Vs: -5

Gain: 0 dB

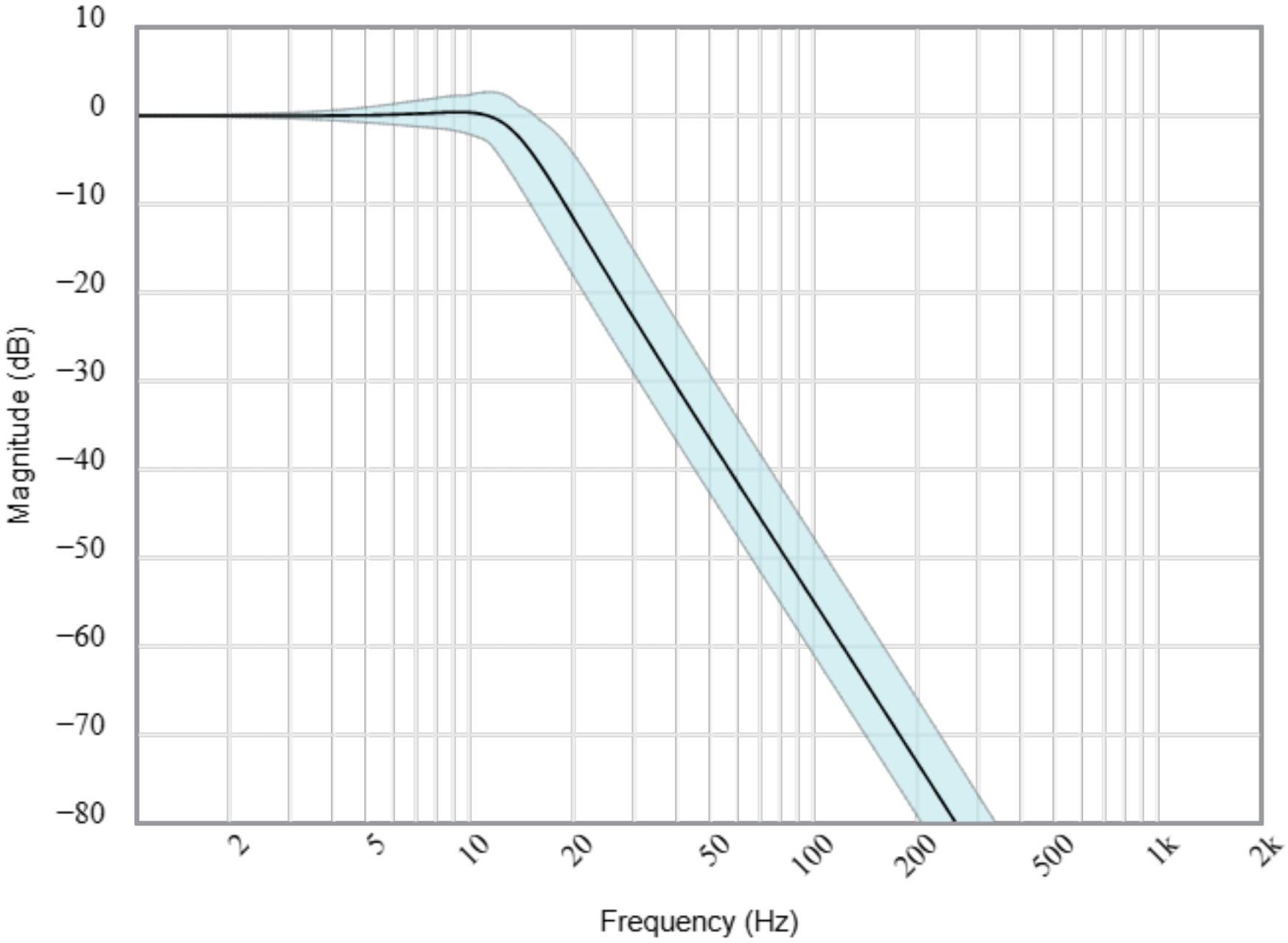
Passband: -0.1dB at 11Hz

Stopband: -60dB at 200Hz

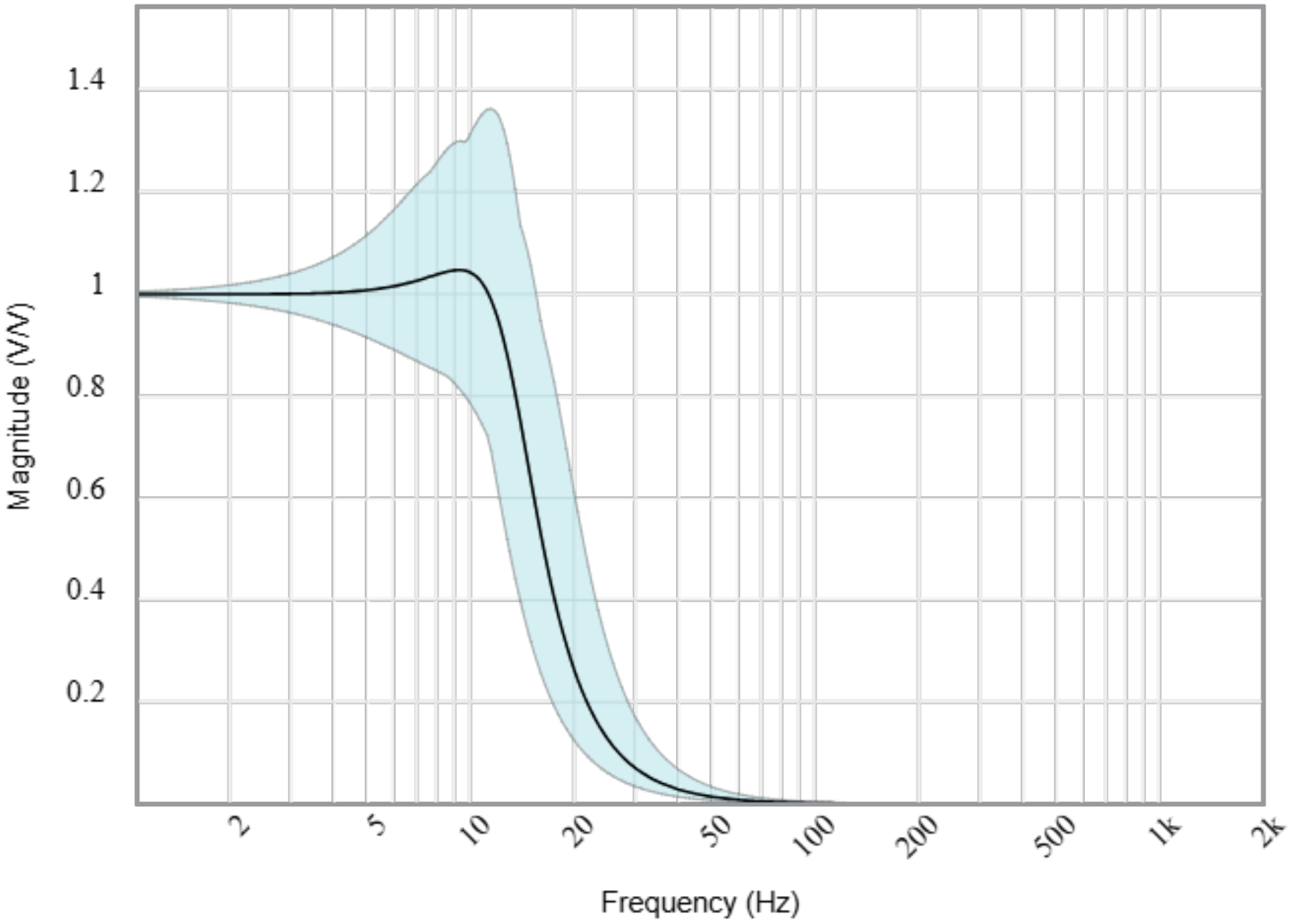
Component Tolerances: Capacitor = 20%; Resistor = 5%; Inductor = 5%; Op Amp GBW = 20%

BOM: refer to BOM.csv file

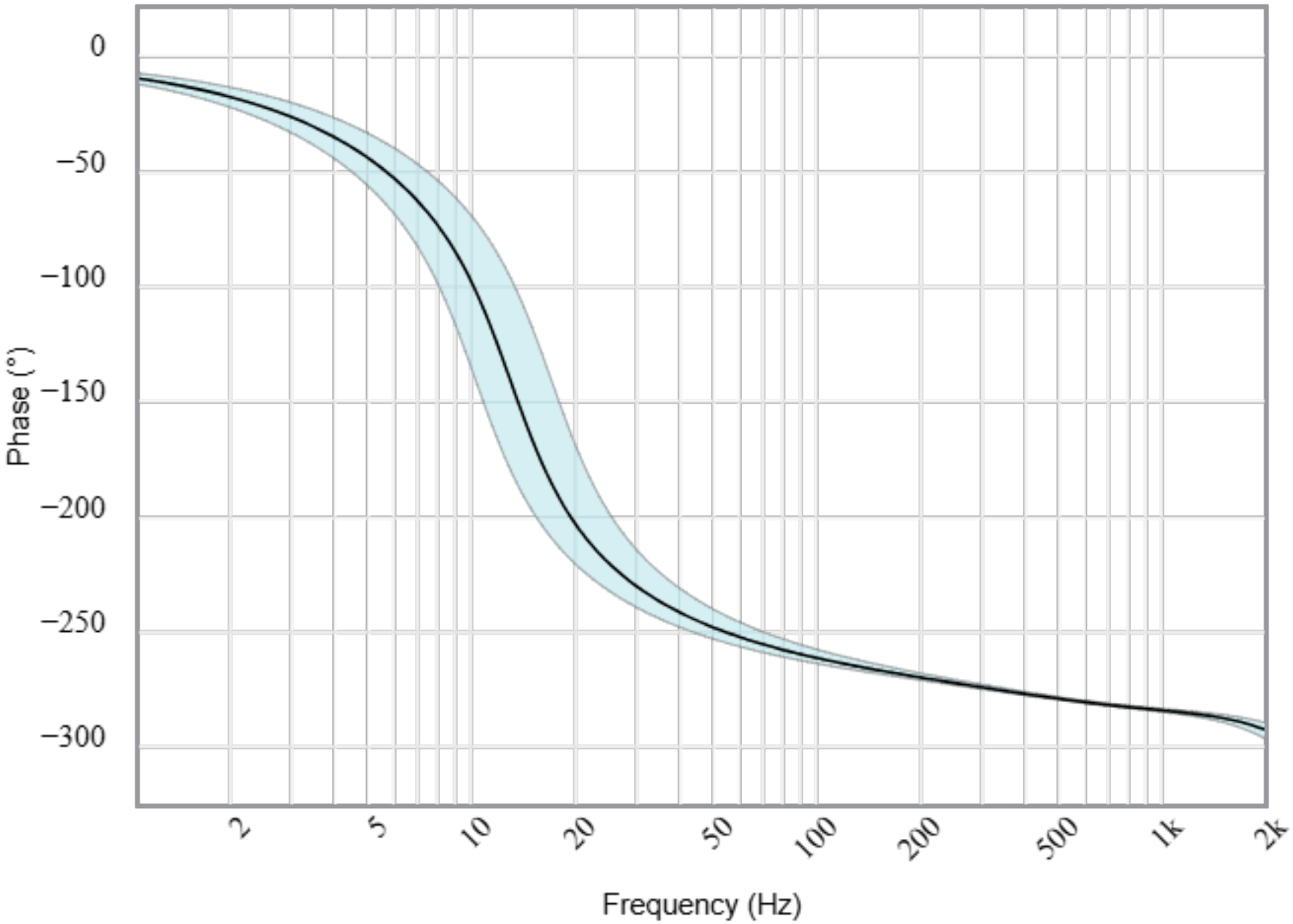
Magnitude(dB)



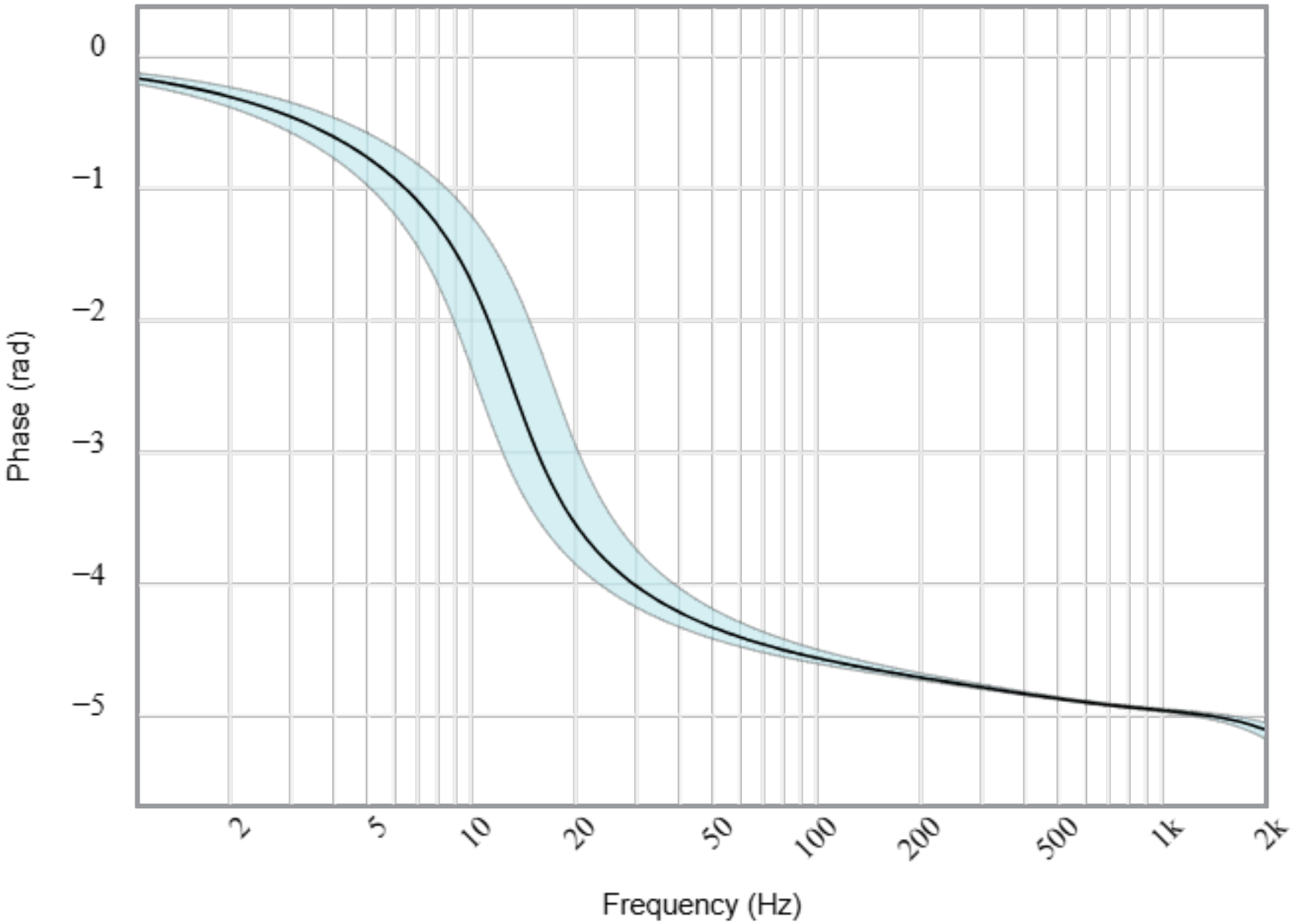
Magnitude(Volts per Volt)



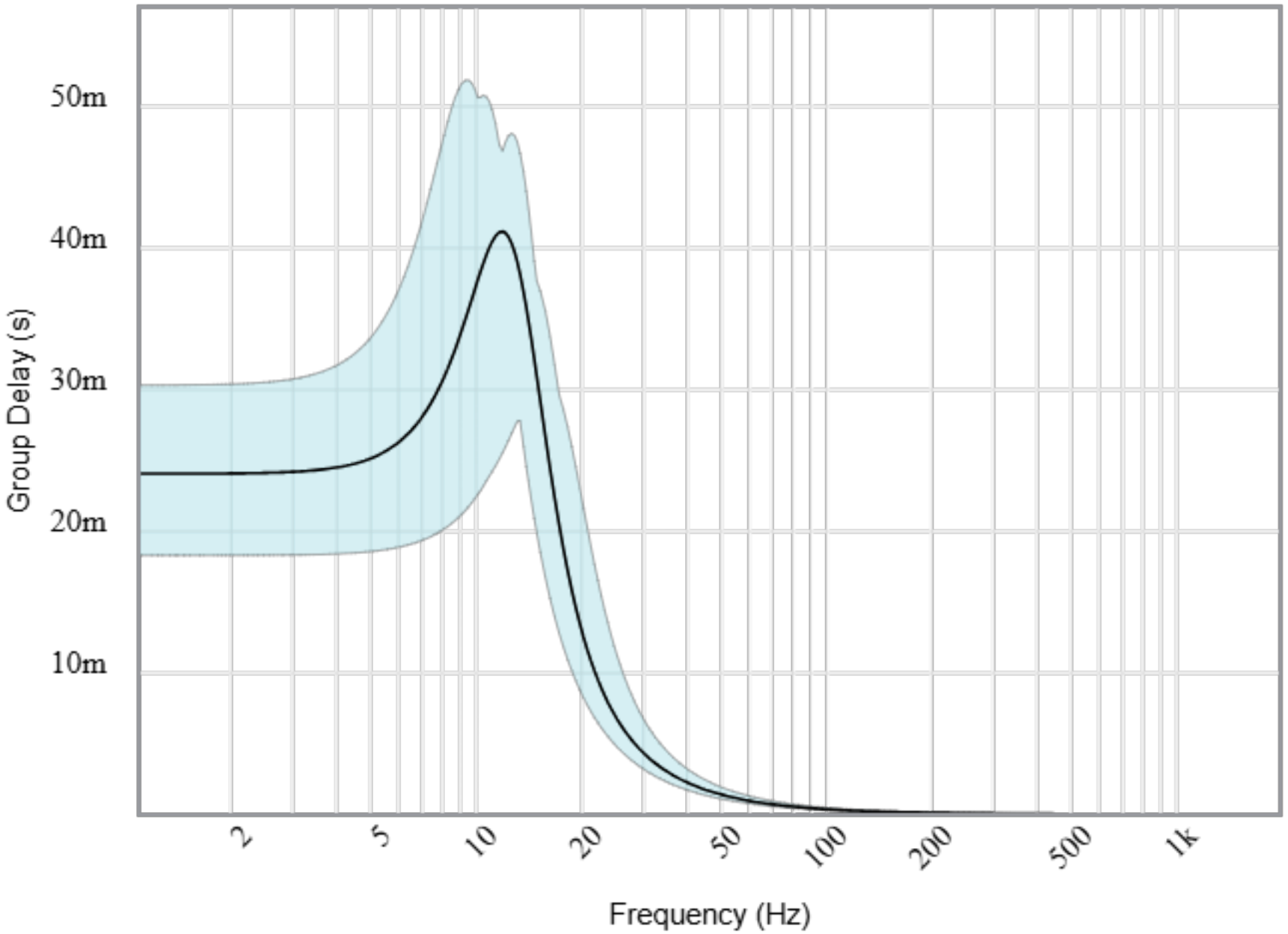
Phase(degrees)



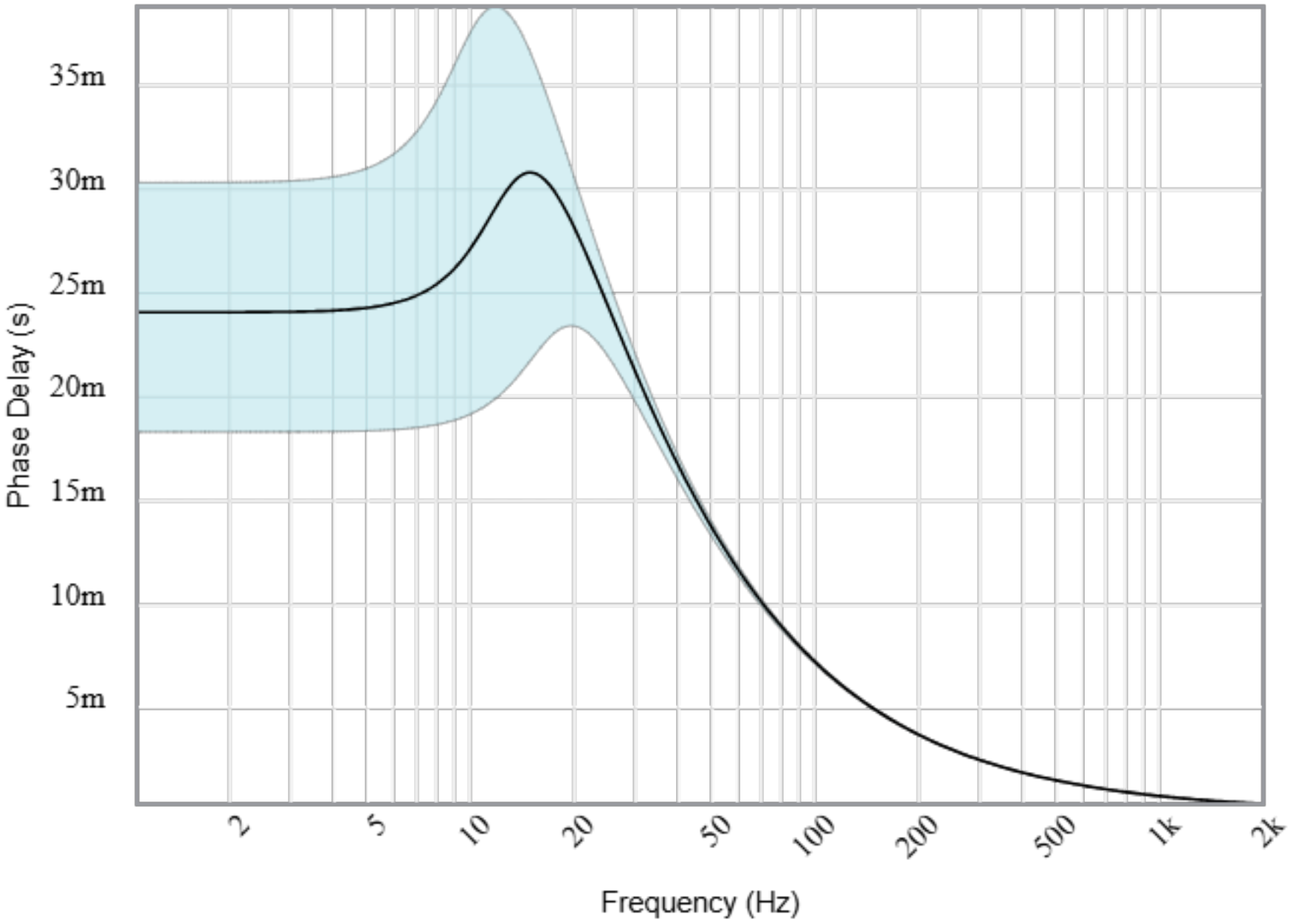
Phase(radians)



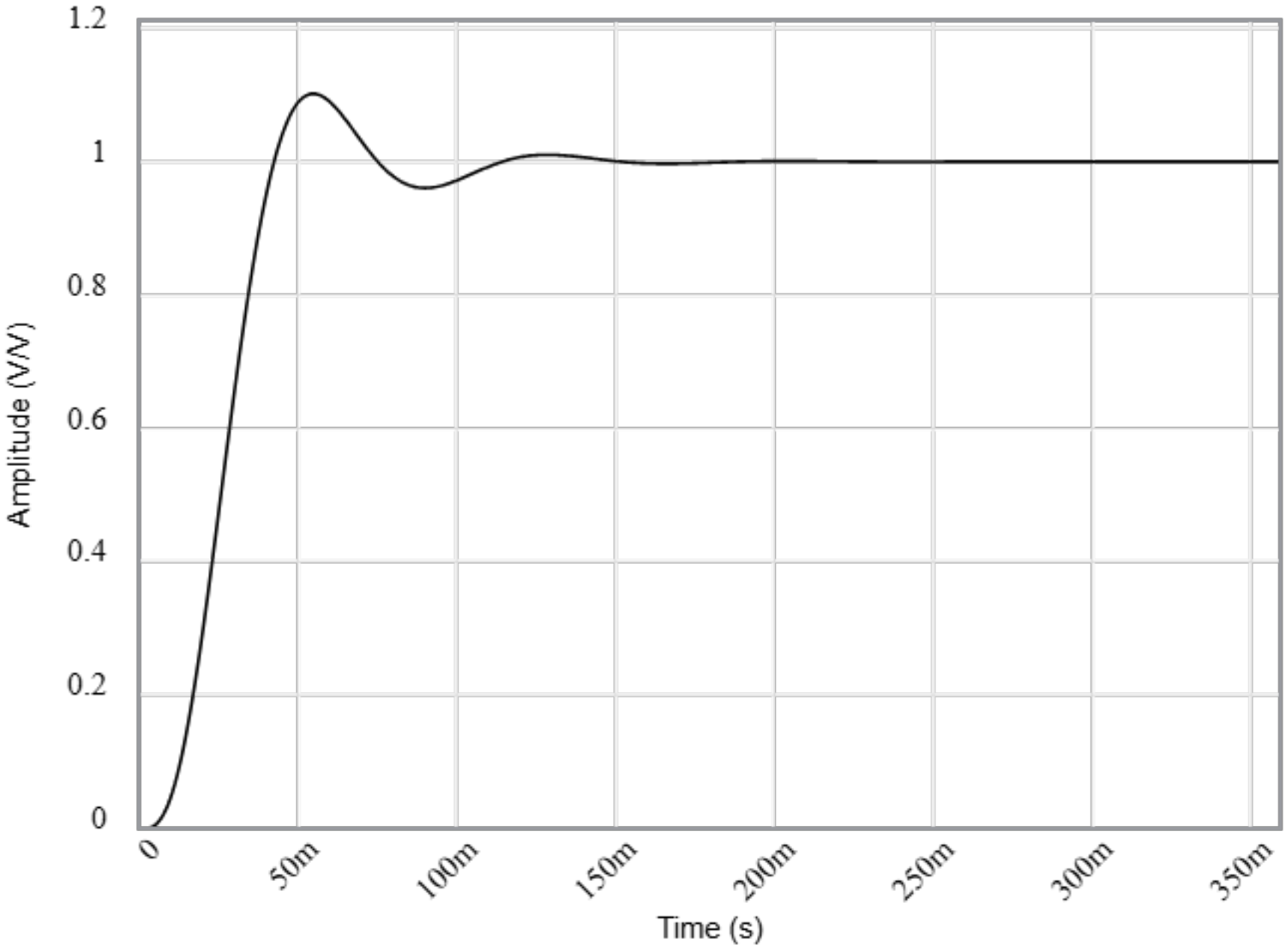
Group Delay


50m
40m
30m
20m
10m
Group Delay (s)
2
5
10
20
50
100
200
500
1k
Frequency (Hz)

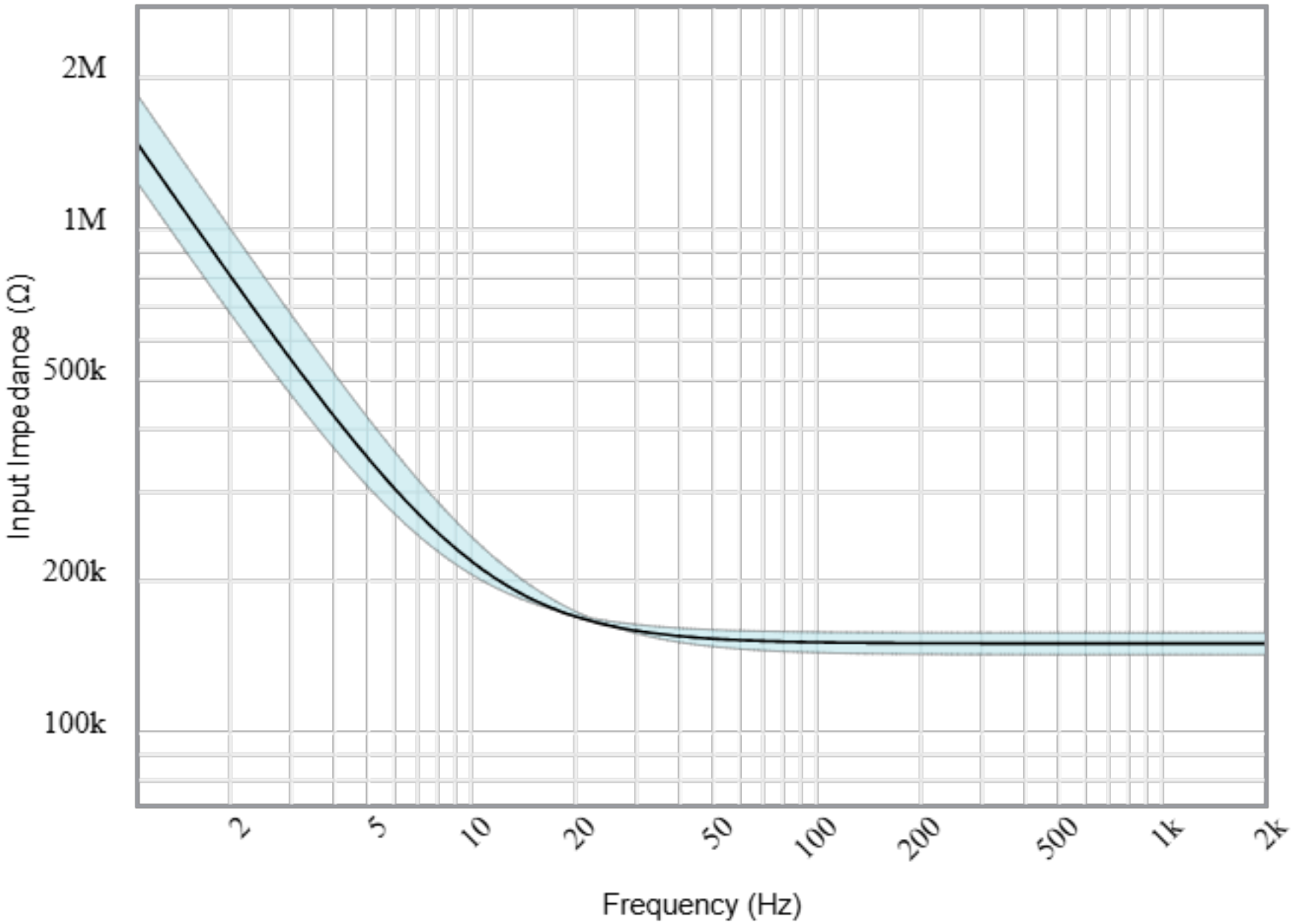
Phase Delay


35m
30m
25m
20m
15m
10m
5m
Phase Delay (s)
2
5
10
20
50
100
200
500
1k
2k
Frequency (Hz)

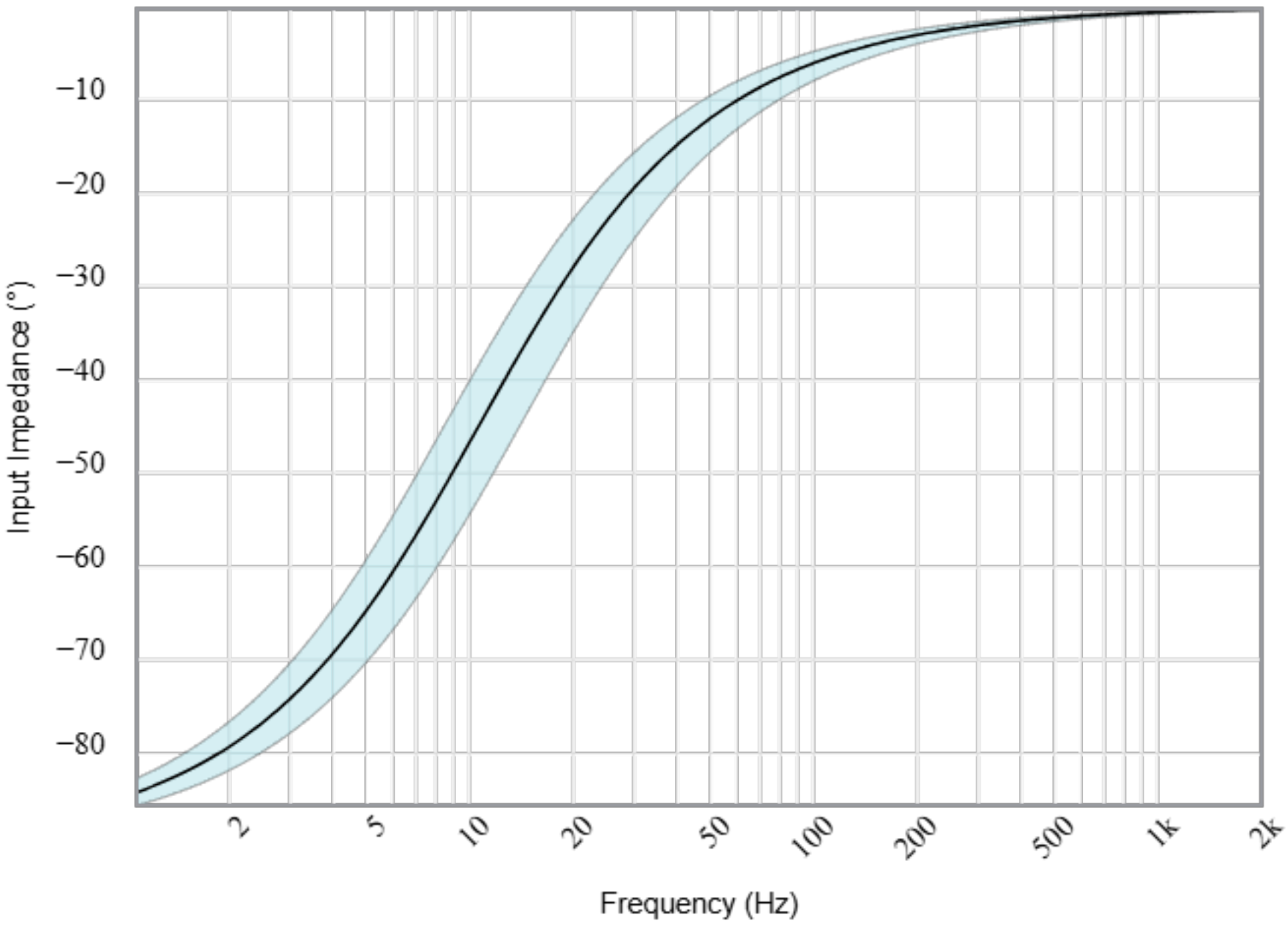
Step Response



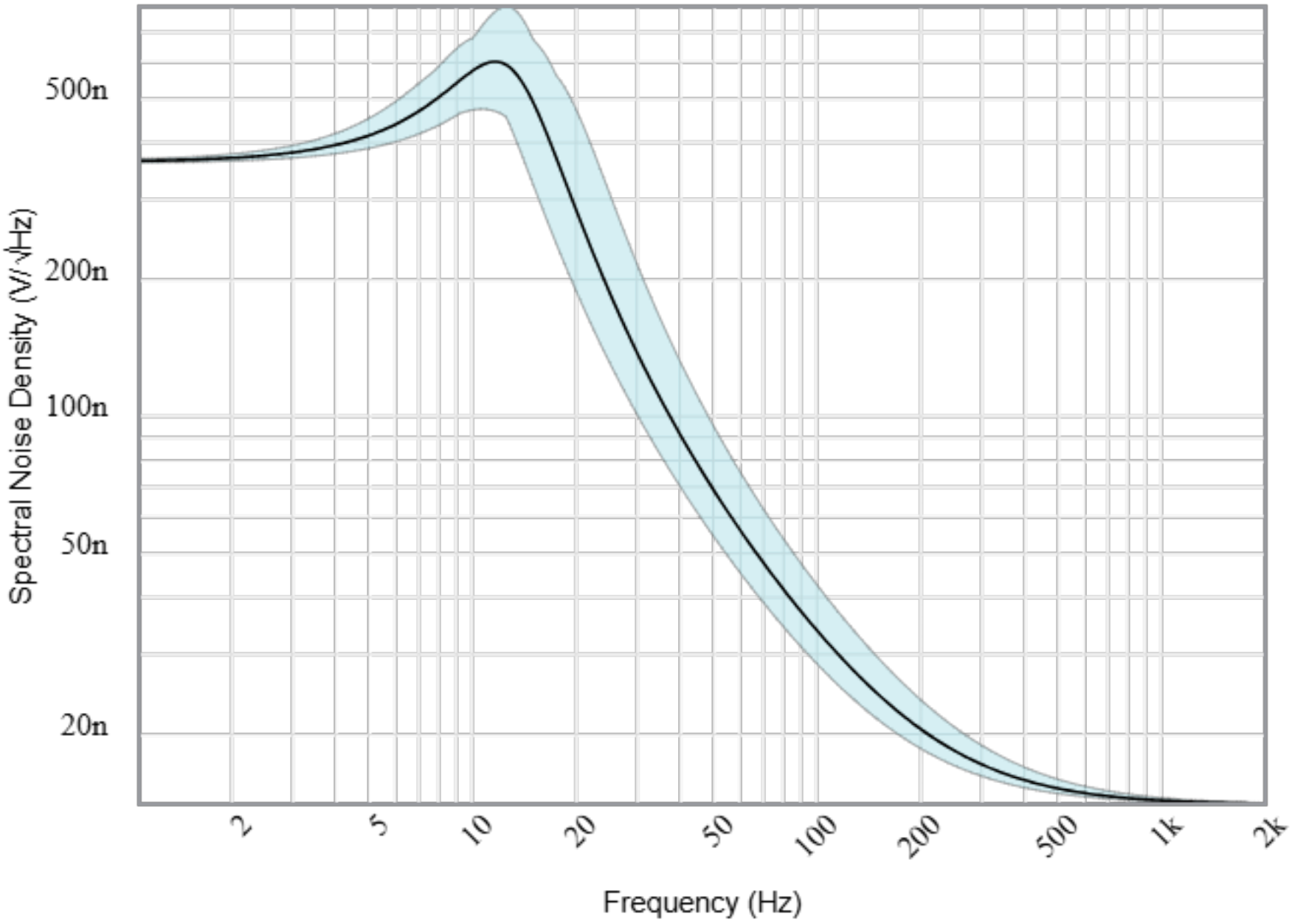
Input Impedance Magnitude



Input Impedance Phase



Noise

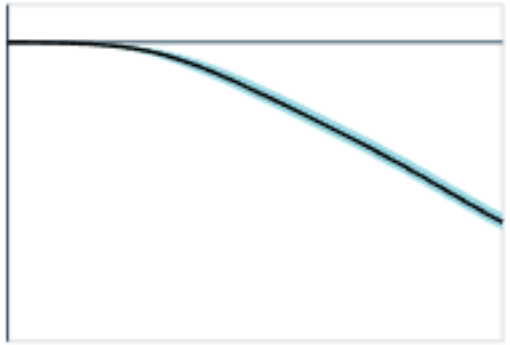

500n
200n
100n
50n
20n
Spectral Noise Density (V/√Hz)
2
5
10
20
50
100
200
500
1k
2k
Frequency (Hz)

Stages

Your filter requires 2 op amp stage(s) with the following characteristics

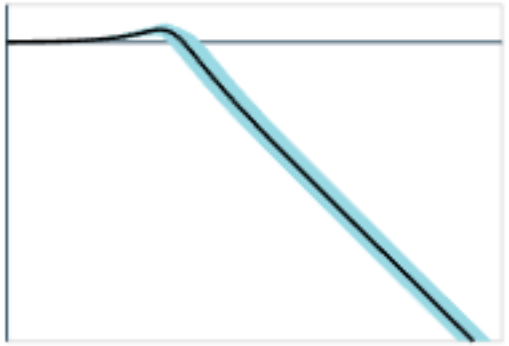
A 1st order Low-Pass Buffered RC

	Target	Simulated
Gain (V/V):	1	1 to 1
f_p (Hz):	10.7	8.41 to 13.9
Q:	N/A	N/A to N/A

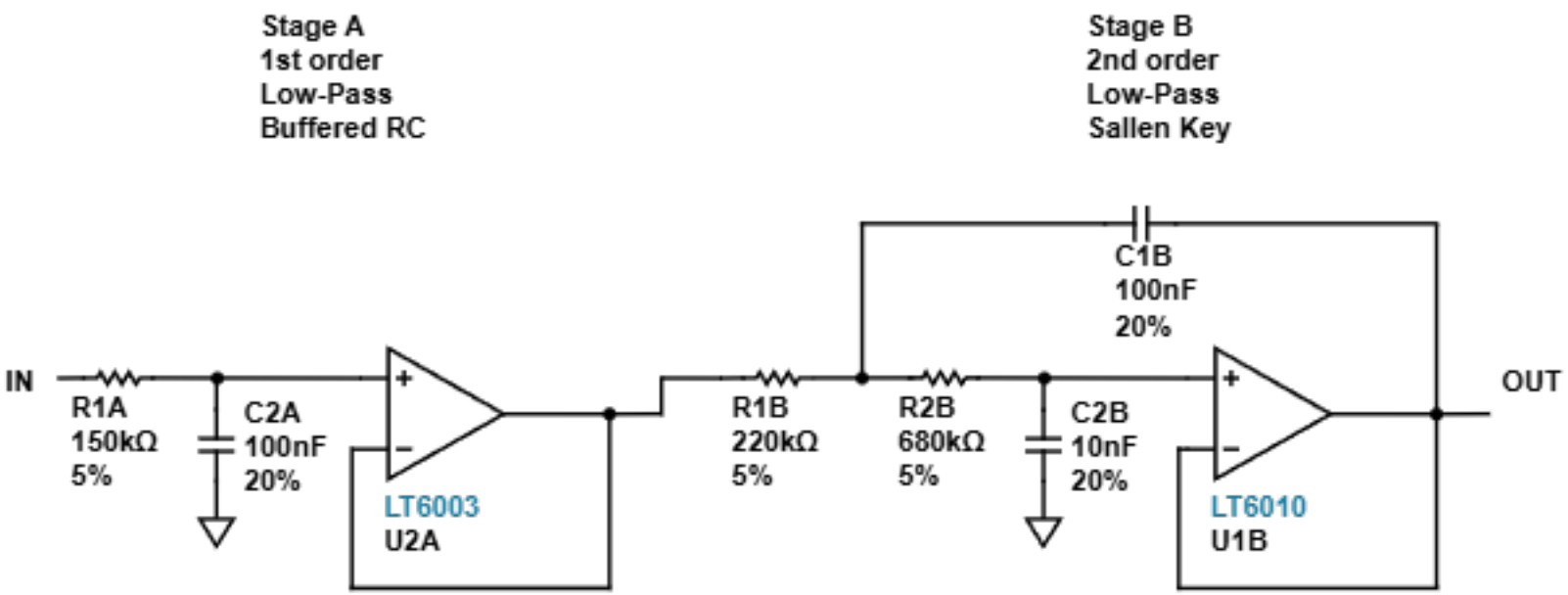


B 2nd order Low-Pass Sallen Key

Target	Simulated
1	1 to 1
14.3	10.3 to 17.1
1.34	1.08 to 1.71



Circuit



BYPASS CAPACITORS