

Equiripple Window

The Equiripple window, developed at Audio Precision, is an approximation to the Dolph-Chebyshev window that has the narrowest main lobe width for a given maximum side lobe depth. The main lobe is approximately 12 bins wide; that is, the first null is about six bins from the main lobe center. The first side lobe, which is also the highest, is -147 dB from the main lobe. The maximum amplitude error with a signal at the bin boundary is about 0.5 dB.

Hamming Window

The Hamming window has the sharpest selectivity of all the windows provided. Adjacent bins average about -7 dB and two bins away the response is about -40 dB. Amplitude error is about -1.7 dB for a signal at the extreme edge of a bin. The side lobes of the Hamming start at only -40 dB to -50 dB below the top of the main lobe, about 4 bins away from the center bin. The response fall-off is not monotonic.

Gaussian Window

The Gaussian window main lobe width is only slightly wider than the Blackman-Harris window and the nearby rejection is considerably better than Blackman-Harris, reaching an average of -100 dB down in the fifth bin away from center. The side lobes are down more than -130 dB, compared to about -100 dB for Blackman-Harris. Maximum amplitude error is about -0.7 dB for a signal at bin edge.

Rife-Vincent Windows

Both Rife-Vincent windows have smooth, monotonically-falling responses with no side lobes. The Rife-Vincent 4 window has about -0.6 dB maximum amplitude error, is about -100 dB at 7 bins off center and about -150 dB at 15 bins off. The Rife-Vincent 5 is slightly wider at the top of the main lobe, with about -0.5 dB maximum amplitude error. It has sharper skirts with attenuation reaching about -106 dB at 7 bins off center and about -150 dB at 12 bins off.

None (No Window or Rectangular Window)

The **None** selection (sometimes called a rectangular window) does not apply any window function before the FFT. This mode is normally used only with synchronous signals; it is not generally useful for non-synchronous signals since energy will be spread across the entire spectrum unless the signal is exactly at bin center. The amplitude error due to the rectangular window attenuation is about 4 dB.