RF ELEMENTS®

BEAM EFFICIENCY

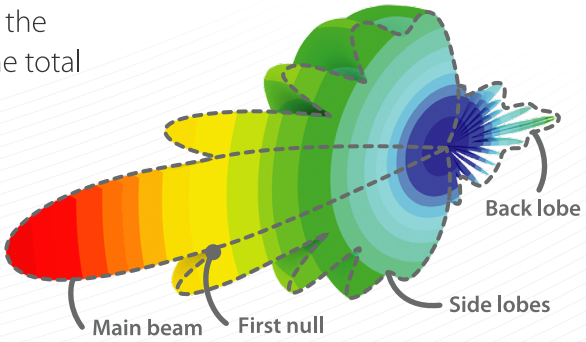
Quick guide to the most important antenna parameter in WISP industry

1 Definition

A complete side lobe measure

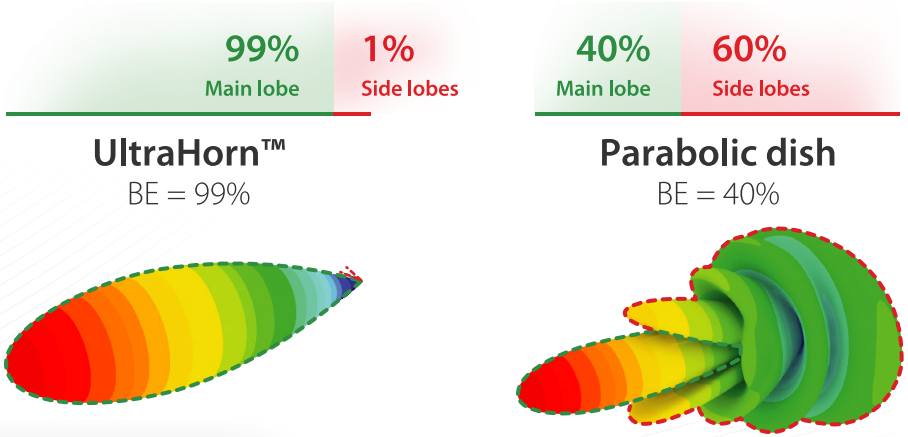
Beam efficiency is the ratio of the energy in the Main Lobe to the total energy an antenna radiates.

$$BE = \frac{E_{ML}}{E_{TOT}}$$



E_{ML} - energy contained in the Main Lobe
E_{TOT} - total radiated energy

2 Easy comparison



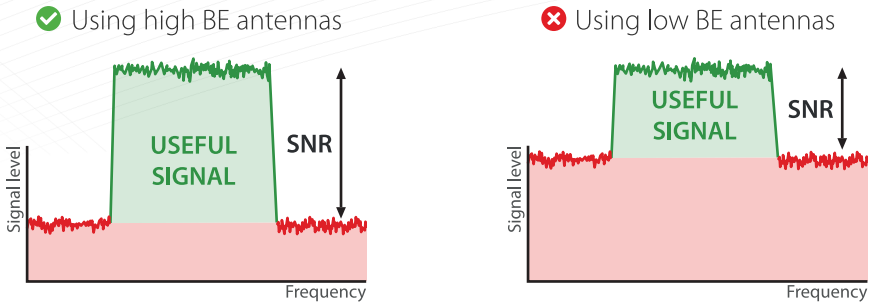
BE enables easy comparison of antennas.
Higher BE = Better antenna performance

3 Beam Efficiency of RFE Antennas

RF elements horn antennas have industry leading Beam efficiency averaging 95%.

4 Benefits of High Beam Efficiency

High BE provides high SNR, which is more important for high throughput than signal strength alone.



High BE → Low Side lobes → High SNR → High Throughput