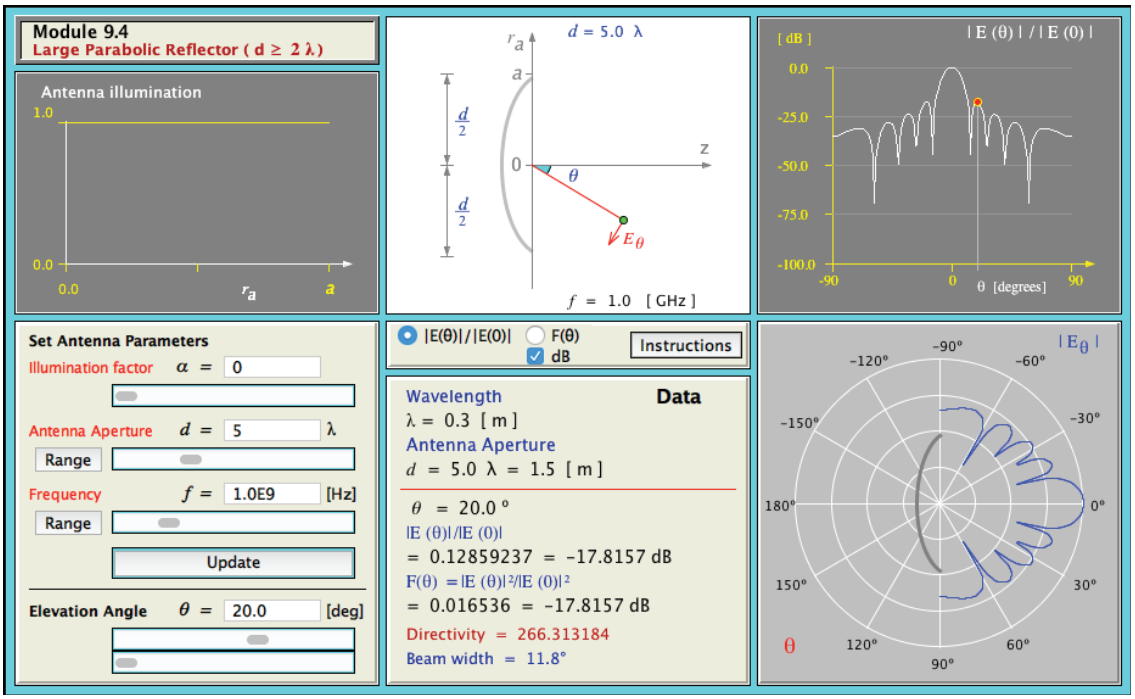
9.40 A parabolic dish antenna has a diameter $d = 5\lambda$. Use Module 9.4 to evaluate three antenna parameters, namely the directivity D, the beamwidth β, and the level of the first sidelobe next to the mainbeam, all at the following three values of the taper factor: $\alpha = 0$, $\alpha = 0.5$, and $\alpha = 1$.

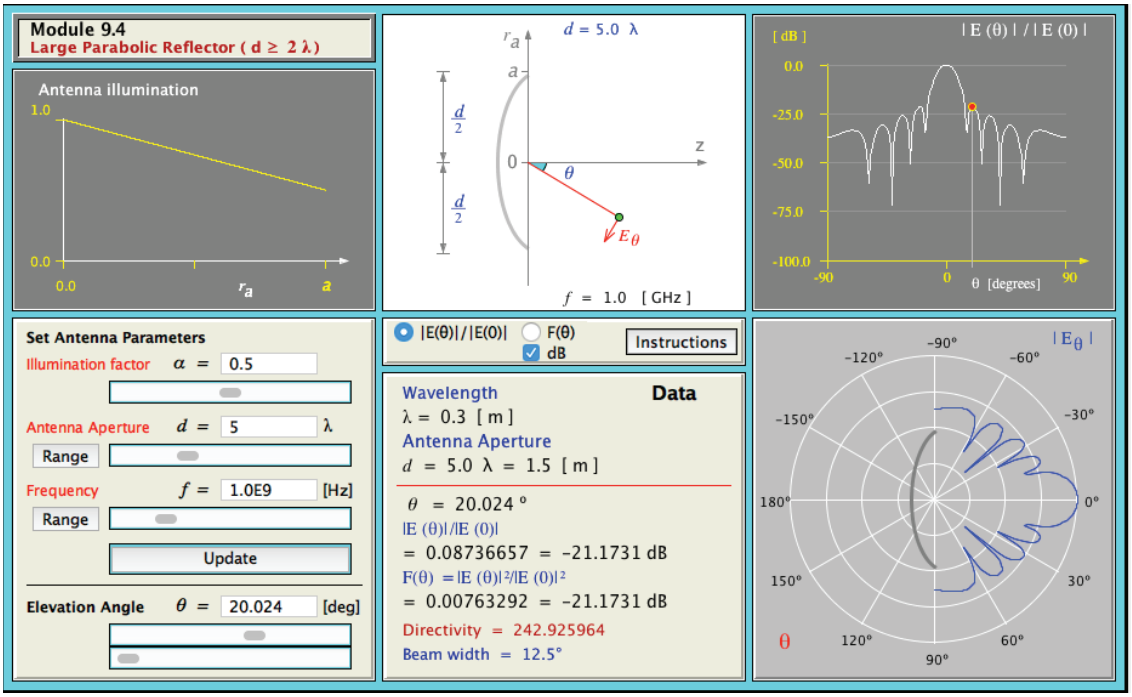
Solution: Using Module 9.4, the following data was extracted:

α	D	β	Sidelobe Level
0	266.31	11.8°	−17.82
0.5	242.93	12.5°	−22.43 dB
1	158.66	15.45°	−33.75 dB

For $\alpha = 0$:



For $\alpha = 0.5$:



For $\alpha = 1$: