

Performance Characteristics of Phase-Correcting Fresnel Zone Plates

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This paper gives specific measured and/or theoretical characteristics of phase-correcting zone plate antennas. Parameters described include off-axis performance, axial intensity dependence, efficiency, distortion and aberrations, and bandwidth. Measured data are summarized for 10, 94, and 140 GHz. This type of zone plate has advantages (compared to a lens) of reduced loss, weight, volume, cost, and planar construction, with similar diffraction-limited beamwidth and major-sidelobe performance, but lower efficiency.

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