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Abstract:We demonstrate how replacing the silicon lenses, traditionally used to couple radiation into parallel plate waveguides, with integrated cylinder-based horn couplers not only greatly improves ease of use and fabrication but also features gap independent coupling. The couplers, created from chords of a cylinder, give reflection free transmission through the waveguide that is on the order of the quasi-optical approach. The gap independent coupling is demonstrated through a precise measurement of the metal conductivity of the THz skin depth layer. © 2012 American Institute of Physics.
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