# TRAVELING-WAVE MEMBRANE PHOTOMIXERS

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## Abstract

Traveling-wave photomixers[1] have superior performance when compared with lumped area photomixers[2] in the 1 to 3 THz frequency range. Their large active area and distributed gain mechanism assure high thermal damage threshold and elimination of the capacitive frequency roll-off. However, the losses experienced by the RF wave traveling along the coplanar strips waveguide (due to underlying semi-infinite GaAs substrate) were a serious drawback. In this paper we present device designs and an experimental setup that make possible the realization of photomixers on membranes which eliminate the losses.

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