

# **A Compact 90/Spl Deg/ Three-Branch Beam Splitter Based On Resonant Coupling**

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## **Summary**

A compact 90/spl deg/ three-branch beam splitter is proposed. The device relies on the use of a high contrast material system. It utilizes a rectangular resonant cavity for its operation, which ensures excitation of a resonant cavity mode with even symmetry in both the vertical and the horizontal directions. Numerical simulations using the method of lines (MOL) show that it is possible to control the power splitting ratio among the output arms over a wide range of values. In all the cases examined, the device reflectivity and the fraction of radiated power are kept low.

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