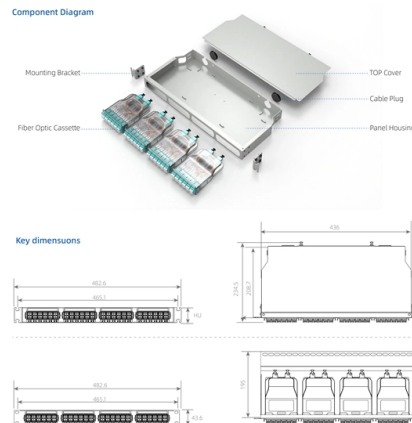


Energy-efficient inventory of arrayed waveguide gratings



Overview

In this paper, we demonstrate low loss passive waveguides and highly efficient arrayed waveguide gratings that can be used, for example, to beam combine infrared (IR) laser arrays. The waveguide structure used consists of an In_{0.47}As core and InP cladding layers. Array waveguide gratings (AWGs) have been widely used in multi-purpose and multi-functional integrated photonic devices for Microwave photonics (MWP) systems. They play a key role in wavelength division multiplexing (WDM) systems by enabling efficient routing of multiple data channels over a single optical fiber and as a. Arrayed waveguide gratings (AWGs) are key optical components of various new applications in telecommunication, astronomy, medical imaging, and spectroscopy. Now, the device size is not limited by the bend radius anymore. They image the field in an input waveguide onto an array of output waveguides in such a way that the different wavelength signals present in the input waveguide are imaged onto different output waveguides.

Article Content

O-band Energy-efficient Broadcast-friendly Interconnection Scheme

We present an O-band energy-efficient broadcast-friendly optical architecture relying on a silicon photonics broadband MZM and an 8×8 AWGR. Experimental validation is demonstrated at 10Gb/s

High-efficiency Mid-Infrared InGaAs/InP Arrayed Waveguide Gratings

We report the fabrication of InGaAs/InP based arrayed waveguide gratings featuring low insertion loss and non-uniformity. This device can be integrated monolithically with on-chip III-V lasers to make

4 Arrayed Waveguide Gratings

Another highly effective method to reduce the insertion loss of an AWG, which is based on the same idea of tapering, has been patented by Lucent: A segmented transition region is inserted between

Arrayed Waveguide Grating

Introduction Arrayed Waveguide Gratings (AWG) are optical Due to their ability to multiplex large numbers of wavelengths into a planar devices that are usually used as multiplexers/ single optical

Simulation and design of arrayed waveguide gratings for InP

We analyze the arrayed waveguide grating response on indium phosphide (InP) membranes on silicon (IMOS) technology. The model is based on an analytical approach (Kleijn et

Compact arrayed waveguide grating devices in Silicon-on-insulator

Here we present arrayed waveguide grating (AWG) devices fabricated with CMOS based processes, including 248nm deep UV lithography. The device size is not limited by the bend radius anymore, but

The Role of Arrayed Waveguide Gratings in Energy-Efficient Optical ...

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Review Paper of Array Waveguide Grating (AWG)

Abstract – An array waveguide grating multiplexer and demultiplexer in particular is one of most successful optical filters and it is a key component of photonic networks and it is cost-effective

The role of Arrayed Waveguide Gratings in energy-efficient optical ...

The power consumption of large IP routers is increasing too fast with the increase of Internet traffic. This power consumption can be reduced if Optical Switching Fabrics (OSFs) are used instead of

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O-band Silicon Photonics 8×8 Arrayed Waveguide Grating Router

O-band Energy-efficient Broadcast-friendly Interconnection Scheme with SiPho Mach-Zehnder Modulator (MZM) & Arrayed Waveguide Grating Router (AWGR) Stelios Pitris, Charoula Mitsolidou,

Compact Silicon-Arrayed Waveguide Gratings with Low Nonuniformity

Array waveguide gratings (AWGs) have been widely used in multi-purpose and multi-functional integrated photonic devices for Microwave photonics (MWP) systems. In this paper, we

Silicon-Photonics-Embedded Interposers as Co-Packaged

The embedded arrayed waveguide grating and reflective optical filter showed a wavelength shift on the order of 0.1 nm with our embedding process.

Design and fabrication optimization of low-crosstalk silicon arrayed ...

To satisfy the stringent requirements of large-capacity optical communication systems, the high-performance silicon arrayed waveguide gratings (AWG) with 32 wavelength channels and 100

Arrayed waveguide gratings in lithium tantalate integrated photonics

Arrayed Waveguide Gratings (AWGs) are widely used photonic components for splitting and combining different wavelengths of light.

High-Efficiency, Uniform AR Waveguide Enabled by a Hybrid

The unexpected high efficiency of diffraction gratings, modulations and stability of the SRG in azopoly (ether imide) MATERIALS SCIENCE AND ENGINEERING B-ADVANCED FUNCTIONAL

High-efficiency mid-infrared InGaAs/InP arrayed waveguide gratings

In this paper, we demonstrate low loss passive waveguides and highly efficient arrayed waveguide gratings that can be used, for example, to beam combine infrared (IR) laser arrays.

Arrayed Waveguide Grating (AWG)

Arrayed Waveguide Gratings (AWG) play a crucial role in modern optical communication, enabling efficient and high-capacity optical channel multiplexing and demultiplexing. Although there

Silicon nitride O-band (de)multiplexers with low thermal sensitivity

Motivated by these characteristics, many Si₃N₄-based passive functional components such as waveguides, ring resonators, grating couplers, , arrayed waveguide gratings, (de ...

(PDF) Large group delay and low loss optical delay line based on ...

Abstract and Figures On-chip optical delay lines (ODLs) based on chirped waveguide Bragg gratings (CWBG) have attracted much attention in recent years.

Arrayed Waveguide Grating

These design of these devices are based on an array of and demultiplexers in a Wavelength Division Multiplexed (WDM) waveguides with both imaging and dispersive properties.

Custom Arrayed Waveguide Gratings with Improved Performance

Arrayed waveguide gratings (AWGs) are key optical components of various new applications in telecommunication, astronomy, medical imaging, and spectroscopy. It is a very powerful integrated

Custom Arrayed Waveguide Gratings with Improved Performance

In this review, an overview of the available methods for improving the bandwidth, spectral resolution, and transmission function shape of AWGs is provided. The working principle as well as the advantages

Anisotropy-free arrayed waveguide gratings on X-cut

This leads to the first implementation of arrayed waveguide gratings on X-cut thin-film lithium niobate with various configurations and high-performances.

Review paper for developments in Array Waveguide Gratings

The proposed work reviews the evolution of Arrayed Waveguide Gratings (AWG) from concentric phased arrays to present day design. The article covers different designs and materials,

Arrayed-Waveguide Gratings

Summary This chapter contains sections titled: Introduction Arrays of Isotropic Radiators Two Examples 1 × 2 Arrayed-Waveguide Grating Multiplexers and Demultiplexers N × N Arrayed

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