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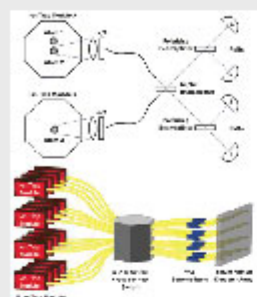
THE PULSE OF THE INDUSTRY



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### The Incremental Quest for Quantum Computing



Researchers are on the threshold of building feasible quantum computers, with a few architectures inching ahead. Will we soon see a quantum leap in their progress? For more than two decades, one of the holy grails of physics has been to build a quantum computer that can process certain types of large-scale, very difficult problems exponentially faster than classical computers.

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### Scanning Vision Continues to Improve Manufacturing Standards



The future of scanning vision systems is to make the underlying technology more accessible, robust and foolproof. From semiconductor manufacturing to the display industry, scanning vision technology is widely found along production lines.

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### Mid-IR Semiconductor Lasers Enable Sensors for Trace-Gas-Sensing Applications

Commercial and research QCL sources can target strong fundamental rotational-vibrational gas absorption lines in the mid-IR spectral range and pure rotational lines in the terahertz range that are one to two orders of magnitude stronger than overtone transitions in the NIR.

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### 3-D Printing Readies for Takeoff



Advances in laser sintering 3-D printing speed up production of parts with complex geometries, all while cutting costs. If it can overcome challenges including a lack of standards, training and design tools, it could be unstoppable.

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### Transparent Ceramics Enable Large, Durable, Multifunctional Optics



Single-crystal sapphire has been the material of choice for defense and other applications that require extremely durable optics, but aluminum oxynitride (ALON) and magnesium aluminate (spinel) have emerged for use when those applications need optics in large sizes or with complex geometries.

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### Products from this Issue



#### Advanced Optical Components

Precision Glass & Optics  
PG&O delivers complete turnkey solutions for industrial, military, and avionics applications.

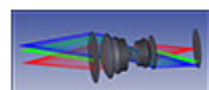
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#### Mid-IR Lasers

Cobolt AB  
Cobolt AB, Swedish manufacturer of high performance DPSS lasers, announces the release of the Cobolt Odin™ Series of compact and tunable Mid-IR lasers.

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#### Optical Design Software

Radiant Zemax, LLC  
Zemax has introduced OpticStudio 14, the latest version of its software for designing 2-D and 3-D models of optical and illumination systems.

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#### LED Hall Luminaire

JENOPTIK Optical Systems GmbH  
Jenoptik's Lucid arena pro LED hall luminaire, developed in collaboration with Leids GmbH & Co. AG, can now be controlled with sensors and situation-based automation.

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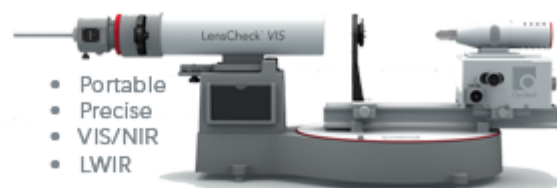
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## FLEX PIVOT FRICTIONLESS BEARINGS

A flexure based bearing, utilizing internal flat crossed springs, capsuled in a cylindrical housing.



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