

NEW

OPTO-ELECTRONICS
proudly presents the company's
PRODUCT-OF-THE-MONTH

SERIES ACGD Circle 235
TE COOLED, AMPLIFIED
GERMANIUM PHOTODETECTORS

- Cooled to -50°C in a permanently sealed, vacuum tight head.
- Dark current reduced to near silicon diode values.
- Bandwidths up to several 10s of MHz.
- Amplifier gains up to 10^5 .
- Noise equivalent power at 1.5μ below $10^{-13}\text{ W}/\sqrt{\text{Hz}}$.
- Sensitive from 0.5μ to 1.8μ .
- Large ($1 \times 1\text{ mm}$) or small ($75 \times 115\mu\text{m}$) photosensitive areas available.
- Lens or optical fiber pigtail.
- Complete turnkey instrument, power supply included.

and a preview of the company's soon-to-be-introduced

OPG 10
OPTICAL PULSE GENERATOR

at wavelengths from 850 to 1500 nm, featuring variable pulsewidths and repetition rate and constant stabilized power output.

ALONG WITH THE COMPANY'S UPDATED PRODUCT GUIDE

- PICOSECOND PHOTODETECTORS (PD)** Circle 224
• Multigigahertz bandwidth • Risetimes as fast as 35 psec • Si, Ge, and InGaAsP • Avalanche and nonavalanche • Lens, fiber, window and SELFOC lens types • Complete with portable power supply.
- AMPLIFIED PHOTODETECTORS (AD)** Circle 225
• Picosecond photodiodes coupled to microwave amplifiers in a single head • Microwatt sensitivity • Si and Ge • Avalanche and nonavalanche • Lens or fiber input • Line or portable power supply.
- COMPONENT PHOTODETECTORS (CD)** Circle 226
• Picosecond photodiodes in TO-3 cans • Si and Ge • PC board mountable • Inexpensive for OEM applications.
- GERMANIUM PHOTODIODES (GD)** Circle 227
• State-of-the-art performance Ge diodes in TO-18 cans • Lens, fiber, and window types • Sizes from $100 \times 130\mu\text{m}$ to $1 \times 1\text{ mm}$ • Attractive quantity discounts.
- PICOSECOND DIODE LASERS (PLS)** Circle 228
• Turnkey systems • Sub 100 psec pulsewidth • 5 to 500 mW peak power • 770 to 1500 nm wavelength • Window or fiber output.
- NANOSECOND DIODE LASERS (NLS)** Circle 229
• Turnkey systems • Pulsewidths from 5 to 20 nsec • 770 to 1500 nm wavelengths featuring 1060 nm for YAG laser simulation • High peak power • Window output.
- SIGNAL ENHANCER (SE)** Circle 230
• Improves S/N of weak repetitive signals by 220x • Used to increase sensitivity of PD's and AD's to microwatt and nanowatt levels • RS232 and GPIB digital outputs.
- FOURIER PROCESSING SYSTEM (FPS)** Circle 231
• Calculates frequency response curve and bandwidth of optical fiber from measured pulse response • 100 GHz • km capability • Incorporates Signal Enhancer SE10 features • Printer and RS232 digital outputs.
- PICOSECOND FIBEROPTIC SYSTEM (PFOS)** Circle 232
• All fiber testing components in one mainframe • Over 30 stock plug-ins available, including psec/GHz photodetectors, psec pulsed and GHz modulated diode lasers, and fiber couplers • SMA optical connectors standard • Custom plug-ins and singlemode connectors available.
- FIBER COUPLERS (FS)** Circle 233
• Singlemode • 1x2, 2x2, or N x M configurations • Low excess loss • Superb directivity • Vibration and temperature insensitive — tested to Mil. Std. 202E • Standard models made with numerous types of factory-supplied fibers • Custom models made with customer-supplied fibers • Rugged, miniature packages • Attractive quantity discounts.



OPTO-ELECTRONICS INC.

RESEARCH IN ELECTRO-OPTICS

For more information, call or write: Opto-Electronics Inc., 2538 Speers Road, Oakville, Ontario, Canada L6L 5K9 Telephone (416) 827-6214 Telex 06-982392

OVERSEAS REPRESENTATIVES:

Australia: QUENTRON, Adelaide (08) 223-6224; **Belgium/Netherlands:** FAIRLIGHT, Rotterdam 010-333418; **France:** PHOTON SCIENCE INSTRUMENTS, Palaiseau (6) 011795; **Germany:** ORIEL, Darmstadt (06151) 82076; **Japan:** JAPAN LASERS, Tokyo (03) 798-0741; **New Zealand:** MASER, Auckland 444-3583; **Sweden:** SAVEN, Vaxholm 0764 31580; **United Kingdom:** ORIEL, Kingston-upon-Thames 01-549 4525.

Communications News

of suppliers of laser sources and receivers grew 55% this year, but the new 1550 nm lasers all came from industry leaders, not new entrants in the field. The same can be predicted for the $2.55\mu\text{m}$ laser. A few makers of HgCdTe detectors should enter the market over the next few years if news of the fluoride fiber continues good. Development of the $2.55\mu\text{m}$ laser will remain, at least for a while, in the province of the large, superbly equipped research centers such as AT&T Bell Labs and British Telecom. □

Singlemode FO System: A First for CATV

Two Indianapolis-area cable television companies have cooperated in the purchase and installation of what is said to be the first singlemode fiberoptic CATV system. With the system in place, Indianapolis Cablevision and American Cablevision of Indianapolis (ACI) can now share advertising, reducing costs for both. The companies purchased optical transmitters and receivers, and frequency modulators/demodulators from Santa Clara-based CATEL Telecommunications. Belden Electronic Wire and Cable of Geneva IL supplied the fiberoptic cable.

Ron Enas, project engineer at ACI, said that the link consists of four fibers in a cable overlashed onto about 8 miles of telephone lines between the two areas. Only two fibers are currently used, both in the same direction. They carry a total of eight channels, six at standard CATEL frequencies and two at non-standard offset frequencies. The offset is necessary because of distortion from the optical source, a conventional solid-state injection laser used in the analog mode.

The system will provide local advertisers in both CATV companies access to commercial insertion spots for satellite programming. When commercial breaks occur, computers open up the receiver at one end of the system and simultaneously turn on the alternative video source (the ads) for the modulator at the other end. Currently, only local advertising programs from Indianapolis Cablevision are transmitted across the fibers to receivers at ACI.

According to Enas, one of the remaining fibers will be activated in the other direction sometime in the next few months to carry advertising or local programming. The other fiber will serve as a backup for the system.

—Holly Bigelow