## ADVANCED SENSING TECHNOLOGY FOR RUGGED ENVIRONMENTS．

## PRECISION ADVANTAGETM OPTICAL COMPONENTS

## AG－1

## APPLICATIONS

Interferometric
interrogation systems
for sensing applications
Metro DWDM and UDWDM applications


## Low Phase Noise Tunable Laser

## FEATURES

－Non－microphonic

－Low phase noise（ 1000 Hz ）：＜ $60 \mathrm{dBre} \mathrm{Hz}{ }^{2} / \mathrm{Hz}$
－Center wavelengths from 1528－1570 nm
－Optional channels spacing 6．5 GHz or less
－Small integrated package
－Suited for field deployment with minimal additional isolation for thermal and acoustic immunity

## TECHNOLOGY

－Sabeus proprietary Multi Variable Control System（MVCS）control feedback loop
－DFB Phase noise reduction＞ 30 dB
－Fully integrated package including drive circuit，optical frequency reference，frequency stabilization circuit and TEC control circuit

## CONFIGURATION

PM or SMF connectorized 1 meter cable
Up to 3 nm tuning range

SPECIFICATIONS

| OPTICAL OUTPUT | SYMBOL | CONDITION | MIN | TYP | MAX | UNIT |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Optical Output Power | Pf | 5 dBm Increments | 5 | － | 17 | dBm |
| TE／TM Extinction Ratio | ER | with PM Fiber | 20 | － | － | dB |
| Power Stability | Pc | Fixed Wavelength | － | ＋／－ 0.1 | ＋／－0．25 | dB |
| Relative Intensity Noise | RIN | 10 MHz to 10 GHz ＠pf $\mathrm{f}=860 \mathrm{MHz}$ ，If $=350 \mathrm{~mA}$ | － | －158 | － | dB／Hz |
| ITU Channel Spacing | － | ＠12．5，25，50， 100 GHz | － | － | － | GHz |
| Tunable Range | － | － | 200 |  |  | GHz |
| Absolute Frequency Accuracy | $\Delta \mathrm{feol}$ | Max deviation over full life and operating conditions | － | － | $\begin{gathered} +/-250 \\ \mathrm{MHz} \end{gathered}$ | MHz |
| Frequency Stability | $\Delta \mathrm{fc}$ | Short Term＊ |  | ＋／－5＊ | ＋／－25 | MHz |
| Effective Spectral Width | $\Delta \mathrm{f}$ | FWHM＠ 20 mW | 10 | － | 500 | kHz |
| Side Mode Suppression | SMSR | ＠ 150 mA | 30 | － | － | dB |
| Spurious（FM Side Band） | － | ＋／－GHz of fc | － | －40 | －35 | dB |
| Power Consumption | W | － | － | 4 | 5 | w |

Note：All specifications are referenced to $25^{\circ} \mathrm{C}$ unless otherwise noted．

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## AG-1 Low Phase Noise Tunable Laser



- Package dimensions: $76.2 \mathrm{~mm} \times 101.6 \mathrm{~mm} \times 16 \mathrm{~mm}$ ( $3^{\prime \prime} \times 4^{\prime \prime} \times 0.63^{\prime \prime}$ )
- Laser operating temp: $0^{\circ} \mathrm{C}$ to $70^{\circ} \mathrm{C}$ ( 32 to $158^{\circ} \mathrm{F}$ )
- Center wavelengths: from 1528 nm to 1570 nm
- Optional power levels: 10 mW to 50 mW
- Optional channel spacing: @ $12.5 \mathrm{GHz}, 25 \mathrm{GHz}, 50 \mathrm{GHz}$, and 100 GHz
Weight: 9.2 oz ( 1.26 kg )


## SOFTWARE CONTROLLABLE

Software control of frequency, power, linewidth, phase noise, and output is available via RS-232 interface. The laser can be set once and the settings are retained in non-volatile memory or changed during operation.

## LASER WITH EVALUATION BOARD

Evaluation board simplifies fiber handling, mechanical and electrical integration. Connect your power and evaluation board communicates with software for rapid integration.

RS232
+5V @ 600mA supply

- 5V @ 30mA supply
$+3.3 V @ 550 \mathrm{~mA}$ supply
$+3.3 V$ @ 2 A supply


MVCS CONTROL FEEDBACK LOOP


CAUTION: Use of controls, adjustments and procedures other than those specified herein may result in hazardous laser radiation exposure.


[^0]
[^0]:    AVOID EXPOSURE INVISIBLE LASER INVISIBLE LASER
    RADIATION IS EMMITTED FROM END OF FIBER OR CONNECTOR

