



HIGH PERFORMANCE EYESAFE APD LASER RANGEFINDER RECEIVER/COUNTER

- HIGH SENSITIVITY (5nW – 10nW)
- 0.5ns TO 30ns PULSEWIDTH
- SEALED & TE-COOLED DETECTOR PREAMP
- CHOICE OF InGaAs APD DETECTORS
- HIGH RESOLUTION OF MULTIPLE TARGETS (10M)
- RANGE FROM 10M TO 64KM
- RANGE ACCURACY 0.0034% OF RANGE \pm 0.05M S.D.
- RANGE RESOLUTION DOWN TO 1.5cm
- NOISE TRACKING THRESHOLD
- TEMPERATURE TRACKING APD BIAS
- FLEXIBLE, PROGRAMMABLE, DIGITAL PROCESSOR
- OPTICAL T_0 AND ELECTRICAL T_0
- UP TO 1.6MHz RANGE REPETITION RATE



DESCRIPTION:

The **7500 Series** is a high performance laser rangefinder receiver and range counter with exceptional sensitivity, accuracy, resolution, multiple target response and dynamic range. The range counter can be triggered with either an Optical T_0 (for best accuracy) or an Electrical T_0 , via MMCX jack, while employing optical pulsewidths from 0.5ns to 30ns at 1550nm or 1060nm. The **7500 Series** can compute ranges from 10M up to 64KM with great accuracy while recognizing up to 255 targets separated by as little as 10M. High-speed parallel data interface allows the user to modify range resolution, minimum and maximum range, and time-programmed gain. The on-board high voltage power supply biases the APD at optimum voltage while tracking temperature. The TEC mounted 80 μ m or 200 μ m InGaAs APD preamp is housed inside a hermetic TO-8 package mounted on top of a heatsink. Noise tracking threshold allows the rangefinder to be used in sunlight; the user may adjust threshold via external FAR signal. The user has the capability to monitor the detector/preamp output via an MMCX jack.

Specifications subject to change without notice.

Consult factory with your custom requirements.



APPLICATIONS:

*High Accuracy Laser Rangefinder Systems, 3-D Ladar Imaging/Profiling,
Collision Avoidance, Proximity Sensing*

"In the event this commodity will be transferred to a "foreign person" as defined in 22 CFR 120.16, either outside or within the United States, a validated US State Department license is required."

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SPECIFICATIONS: MODEL 7501

<p>Detectors/Sensitivity (50% detection; 6ns pulse; 0.1% FAR; TEC set for 15°C) Detector type: InGaAs APD</p> <table border="1"> <thead> <tr> <th><u>MODEL</u></th> <th><u>DET Ø</u></th> <th><u>TYP.</u></th> </tr> </thead> <tbody> <tr> <td>7501-03</td> <td>80µm</td> <td>5 nW</td> </tr> <tr> <td>7501-04</td> <td>200µm</td> <td>10nW</td> </tr> </tbody> </table> <p>At 1.06µm, multiply sensitivity value by 1.45. Consult factory for different pulsewidths.</p> <p>Target Range 10M to 64KM</p> <p>Range Accuracy 0.0034% of range ± 0.05M S.D. 0.2M max-min</p> <p>Range Resolution Max. 1.5cm. Available resolution limited by maximum range and 24 bit output</p> <p>Multiple Targets Resolves up to 255 targets located at least 10M apart</p> <p>Range Repetition Rate Maximum of 50 ranges per second standard. Custom versions up to 1.6MHz.</p> <p>Pulse Amplitude Time Walk 6ns typical pulse; from 2 times MDS to 10,000 times MDS (TPG used); 6 inches (15cm)</p> <p>Optical Pulsewidths Optimized for 6ns</p> <p>Dynamic Range 80,000 minimum</p> <p>Electrical T₀ 3V or 5V pulse into 50ohm via MMCX coax jack (Amphenol part# 908-24100) 10ns to 50µs pulsewidth; rising edge triggered</p>	<u>MODEL</u>	<u>DET Ø</u>	<u>TYP.</u>	7501-03	80µm	5 nW	7501-04	200µm	10nW	<p>Analog Output Output from MMCX coax jack (Amphenol part# 908-24100) depicts signals captured by the optical detector. Terminate coax with 50ohm.</p> <p>Data Transfer Rate 5Mbits/sec max transfer via connector (3M part# 3429-5002) Parallel 8 bit data bus; either +5V or +3.3V logic</p> <p>APD temp setting APD may be cooled via the on board TEC controller to a temperature specified by the user ranging from 15°C to 40°C</p> <p>Time Programmed Gain 32 programmable steps 31dB voltage range Minimum step time resolution 13ns</p> <p>FAR Determined via pot setting from ~0 to ~∞</p> <p>External FAR Apply -2.5V to +2.5V at Pin 19 to set required FAR or leave open</p> <p>Bias Voltage Determined via pot setting from 30V to 60V Set to optimum APD voltage at factory</p> <p>Operating Temp -35°C to +50°C with external heatsink</p> <p>Power +5V (+4.9 to +5.25) at 750mA (1.1A at max. cooling) -5V (-4.9 to -5.25) at 350mA (3M part# 3429-5002)</p> <p>Weight 3 oz (85 gm)</p> <p>Size Receiver: 0.616" (15.65mm) Ø x 0.415" (10.54mm)_{max.} PCB: 4.97" x 2.06" x 0.85" (126.2mm x 52.3mm x 21.6mm)</p> <p>Optical 0.23" (6mm) dia. clear aperture. 0.035" (0.5mm) typical thickness window, RI=1.5</p>
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