



Not Recommended for New Designs (NRND)
See Model 755A-04.1

ANALOG MODULES, INC.

MODEL 758A
HYBRID EYESAFE LASER
RANGEFINDER RECEIVER

HIGH PERFORMANCE HYBRID EYESAFE LASER RANGEFINDER RECEIVER

- SUPER HIGH SENSITIVITY DOWN TO 3 nW
- OPTIMIZED FOR MULTIPLE TARGET RESOLUTION
- HYBRID CONSTRUCTION
- FAST RECOVERY FROM OVERLOAD
- THERMO-ELECTRICALLY COOLED DETECTOR
- TIME PROGRAMMED GAIN
- NOISE TRACKING THRESHOLD
- 28 PIN DIL HERMETIC PACKAGE
- NO NEGATIVE SUPPLY NEEDED
- NON-CRITICAL LASER PULSE TIMING



DESCRIPTION:

The **Model 758A** is a new generation of eyesafe laser rangefinder receivers optimized for ultra high sensitivity, excellent overload performance and exceptional ability to discriminate between two close targets. Pulse widths from 1 to 40 ns are processed over seven orders of magnitude dynamic range, and operation is possible from 1.0 to 1.6 μm . The detector and critical pre-amplifier components are thermoelectrically cooled to minimize noise using a built-in temperature sensor and controller. A choice of different sizes of InGaAs APD detectors is available to achieve optimum performance in different rangefinders. Time-programmed gain is triggered at T_0 to eliminate false echoes at short ranges. Linear outputs are available for custom applications. Low-impedance output is provided for a range counter. The **Model 758A** is designed to meet the demanding requirements of military applications and offers the highest sensitivity of our family of rangefinder receivers. The small size and PCB mounting make it ideal for compact systems requiring high target fidelity and maximum performance.

SPECIFICATIONS:

Detectors/Sensitivity

(50% detection; 6 ns pulse; 0.1% FAR; TEC set for 15°C)
Detector type: InGaAs APD

MODEL	DET \varnothing	TYP.	MAX.
758A-03	80 μm	3 nW	6 nW
758A-04	200 μm	6 nW	9 nW

At 1.06 μm , multiply sensitivity value by 2.

Multiple Target Resolution

Small Signal	(50 nW)	10 meters typical
Large Signal	(1 mW)	20 meters typical

Dynamic Range 10⁷:1

Package 28 pin DIL-0.6" spacing, 0.1" pin spacing Ni plated, Kovar finish. Sapphire window, AR coated for <1% loss at 1.55 μm .
Base heatsink required

Weight 0.5 oz (14 g)

Time Programmed Gain Range Via external start signal, adjustable, programmable

Output AC coupled, negative going pulse
5.9 to 6.5 V no load
50 Ω source impedance
(see Application Note, page 7)

Power +12 VDC \pm 0.2 V at 65 mA typical
0.9 V at 0.7 A maximum for TEC
TEC cool down rate: 10°C/s
HV bias \geq 100 V, 10 μA
Built-in temperature-corrected shunt regulator for APD and TEC controller to drive an external power transistor.

Size 1.47" x 0.77" x 0.27" (0.3 cu. in.)
(37.3 mm) x (19.6 mm) x (6.9 mm)
Pin length: 0.375" (9.5 mm) typ.

Optical >0.24" (6.1 mm) dia. clear aperture.
Detector <0.040" (1 mm) below
0.020" (0.5 mm) thick window.

Temperature
Operating: -40°C to +71°C
Storage: -55°C to +85°C



See application notes for more information.

Specifications subject to change without notice.

U.S. Patent No. 6,650,404

APPLICATIONS:

Laser Rangefinder Systems, Target Detection Systems

"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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