



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

ANALOG MODULES, INC.

MODEL 758
HYBRID EYESAFE LASER
RANGEFINDER RECEIVER

HIGH PERFORMANCE HYBRID EYESAFE LASER RANGEFINDER RECEIVER

- SUPER HIGH SENSITIVITY DOWN TO 3 nW
- OPTIMIZED FOR NARROW 10 ns PULSES
- HYBRID CONSTRUCTION
- HIGH RESOLUTION OF MULTIPLE TARGETS
- THERMO-ELECTRICALLY COOLED DETECTOR
- TIME PROGRAMMED GAIN
- NOISE TRACKING THRESHOLD
- 28 PIN DIL HERMETIC PACKAGE
- NO NEGATIVE SUPPLY NEEDED



DESCRIPTION:

The **Model 758** is an eyesafe laser rangefinder receiver optimized for ultra high sensitivity and narrow pulses. 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. A separate noise amplifier and detector provide linear outputs for custom applications, and maintain a constant false alarm rate. TTL/CMOS compatible output is provided for a range counter. The **Model 758** is designed to meet the demanding requirements of military applications and offers among the highest sensitivities 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. An evaluation PCB is available.

SPECIFICATIONS:

Detectors/Sensitivity

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

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

At 1.06 μm , multiply sensitivity value by 2.

Multiple Target Resolution

Small Signal	(50 nW)	15 meters typical
Large Signal	(1 mW)	30 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. Start low gain < 1 μs before T_0 .

Output TTL logic, inverting and non-inverting
30ns pulsewidth minimum

Power +12 VDC 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 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
.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.

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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