



## 35.00 GHz Ranging Sensor Head, Dual Channel, Long Range

### Description:

**Model SSD-35320-22L-D1** is Ka Band, lens antenna-based ranging sensor head that is designed and manufactured for **long range** measurements of a moving or stationary target's range, speed and direction. The sensor head has a center frequency of 35 GHz and takes a nominal bias of +5.0 VDC/650 mA. The frequency modulation bandwidth of  $\pm 75$  MHz minimum is realized via a tuning voltage of 0 to +20 Volts. The sensor heads are configured with a lens corrected antenna, T/R diplexer, a dual channel (I/Q) receiver and a transmitter/receiver oscillator in an integrated package. Sensor heads with a single receiver are offered under model number **SSD-35320-22L-S1** and can only detect the range and speed of a target.



### Features:

- 35.00 GHz Operation
- Low Flicker Noise and High Sensitivity
- Low Harmonic Emission

### Applications:

- Traffic Management Systems
- Microwave Fence
- Military Surveillance Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Antenna 3 dB Beam-width		12°	
Antenna Side Lobes		-20 dB	
Antenna Gain		22 dBi	
Antenna Polarization	Right-Handed Circular		
RF Frequency Range	33.9 GHz	35.0 GHz	36.1 GHz
FMCW Tuning Bandwidth	$\pm 75$ MHz	$\pm 100$ MHz	
FMCW Tuning Voltage	0 to +20 Volts		
Transmitting Power	+20 dBm		
Receiver I/Q Phase $\Delta$	80°		100°
Receiver I/Q Amplitude $\Delta$	0 dB		2 dB
IF Frequency Range	DC		100 MHz
IF Offset Voltage		$\pm 0.1 V_{DC}$	
Frequency Stability		-0.3 MHz/°C	
Power Stability		-0.03 dB/°C	
DC Supply Voltage		+5 $V_{DC}$ /650 mA	+5.5 $V_{DC}$
Specification Temperature		+25°C	
Case Temperature	-40°C		+85°C



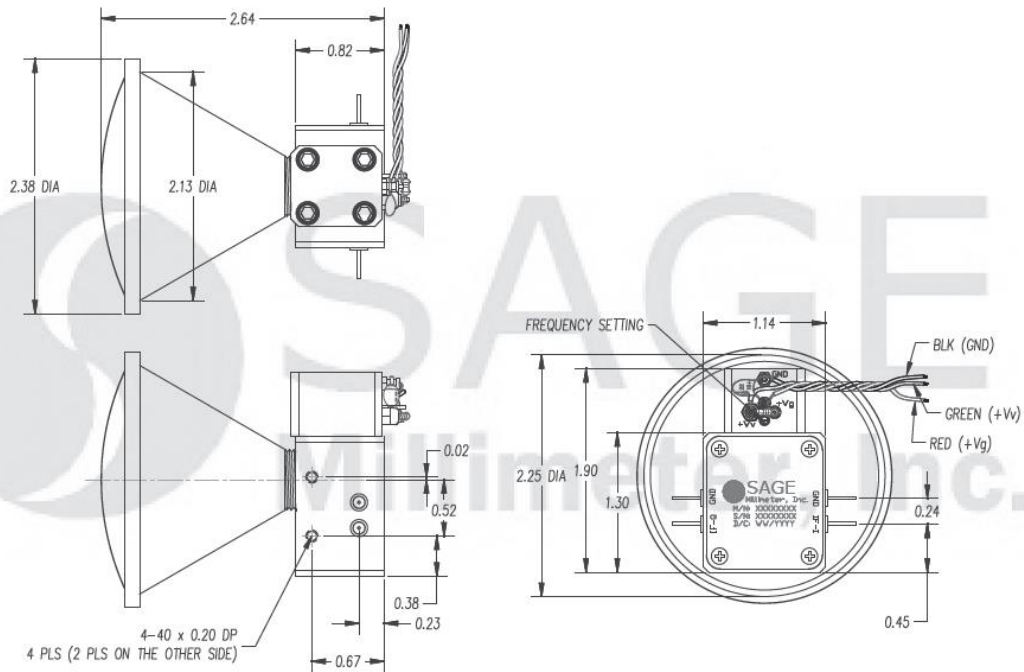


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### Mechanical Specifications:

Item	Specification
Gunn Oscillator Bias Port	Red Wire
Varactor Bias Port	Green Wire
Mixer IF Port	Solder Pin
Mixer IF Ground	Solder Pin
Size	2.38" (W) X 2.38" (H) X 2.64" (L)
Material	Aluminum
Finish	Chem Film
Weight	5.0 Oz
Outline	SD-LA-D

### Mechanical Outline: (Unless otherwise specified, all dimensions are in inches)



#### Note:

- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

#### Caution:

- The device is static sensitive. Always follow ESD rules when working with the device.
- Wrong bias or reverse bias on the sensor will damage the device.
- Exceeding absolute maximum ratings shown will damage the device. Use an additional heatsink or fan if necessary.

