

Infinition 10 GHz Doppler Radar Antenna (BR-1022)

The BR-1022 Doppler Radar Antenna utilizes the Doppler principle to measure the velocity of moving objects. It is particularly well suited for measuring the velocity at the gun muzzle, but is also powerful enough to measure velocity at short and medium range, for projectile calibers ranging from 5.56 mm to 155 mm including standard projectiles, basebleed, tracers, APFSDS, sub-calibers, rockets, etc.

The radar antenna consists of a transmitting and a receiving antenna (bi-static configuration). The transmitter output power can be selected between 0.2W and 2W to accommodate short and medium range measurements. The receiver has a very low noise figure in order to provide maximum sensitivity and detection range. It also provides adequate filtering to reduce the likelihood of interference from other nearby radars operating in the same frequency range. When used in conjunction with Infinition's junction box and TestCenter Doppler processing software, it provides a powerful tool for ballistic analysis.

The BR-1022 housing has been designed using magnesium casting to provide excellent rigidity while minimizing its weight. The entire unit is sealed to prevent dust and water from entering the housing and damaging the electronic components. The radar is painted white to minimize sensitivity to the heat generated by the sun. The BR-1022 unit can operate under a wide range of temperature and weather conditions.

The performance of the BR-1022 unit has been calculated based on actual measurements on different projectile calibers. The range performance in the table below takes into account the effect of the projectile aspect angle along the trajectory.



Features:

- ⊕ Versatile antenna for use at the muzzle or medium range
- ⊕ Rugged design to prevent dust and water damage
- ⊕ Operational in a range of temperature and weather conditions

Applications:

- ⊕ Ammunition Testing
- ⊕ Armor Testing
- ⊕ Muzzle Velocity Measurement & Residual Velocity Measurement
- ⊕ Strike Velocity



Product Specifications

Radar Specifications

- ⊕ **Antenna Gain:** 28 dBI
- ⊕ **Antenna Type:** Flat Panel Microstrip
- ⊕ **Beamwidth:** 4 x 4 degree
- ⊕ **Polarization:** Vertical (horizontal optional)
- ⊕ **Transmitter Output Power:** 0.2 or 2W, selectable
- ⊕ **Transmitter Source:** Phase locked DRO, CW
- ⊕ **Modulation:** None
- ⊕ **Frequency:** 10.525Ghz (nominal)
- ⊕ **Stability:** +/- 5ppm
- ⊕ **Receiver Noise Figure:** < 1.8dB (all losses combined)
- ⊕ **Radial Velocity Coverage:** 30 - 5,000 m/s
- ⊕ **Operating Temperature:** -20 to 50 degC
- ⊕ **Supply:** 115VAC 60Hz 1.0A (North America Model)
230VAC 50Hz 0.5A (European Model)
- ⊕ **Dimension:** 83cm x 45cm x 10cm
- ⊕ **Weight (without yoke):** 21 kg
- ⊕ **Approvals:** FCC

