

# GPS/GNSS Outdoor Antenna

## Model 8230

- High bandwidth to receive GNSS signals:
  - GPS L1
  - GLONASS L1
  - BeiDou B1
  - Galileo E1
  - QZSS L1
- Designed for harsh environments (IP67 rated)
- High out-of-band rejection
- One-year limited warranty

The Model 8230 is a high gain (40 dB) GNSS outdoor antenna covering GPS L1, GLONASS L1, BeiDou B1, Galileo E1, and QZSS L1. It uses a three stage low noise amplifier, a mid-section SAW, and a tight pre-filter to protect against saturation by high level sub-harmonics and L-band signals.

The active antenna circuitry uses +5VDC (provided by the Orolia timing receiver over the antenna coax). Each antenna is terminated with a type “N” female connector. Its weather-proof housing is IP67 compliant, offering a high degree of protection against dust and water. Its conical radome is made of high impact UV stabilized polycarbonate to minimize ice, snow and debris build-up. It can be mounted in a 19mm diameter (3/4 inch) through hole or via its L-bracket.



### Antenna Location

The GPS/GNSS antenna must have an unobstructed line of sight to the sky. Rooftops that are clear of other structures or geographic features overhead, with views to the horizon, generally make good installation locations. Such a clear view allows the antenna to track the maximum number of satellites. Installations with obstructed views may experience reduced reception quality and may not be able to track the maximum number of satellites. When installing a GPS antenna, select a site at which the antenna will not become buried in drifting or accumulated snow. It should not be covered by foliage or placed in a position where it could become obstructed. If possible, avoid placing the antenna in close proximity to broadcast antennas.

### Antenna Cable & Accessories

Orolia recommends low loss coaxial cable such as Times Microwave LMR-400 for the antenna cable. The attenuation characteristics of the LMR-400, or equivalent, at the GPS L1 frequency (1575.42 MHz), along with the high gain of the antenna allows the cable length to a maximum of about 125 meters (400 feet). Orolia offers standard and plenum rated cable assemblies.

For installations where the antenna cable length exceeds 125 meters, Orolia offers a variety of accessories to extend cable lengths including inline pre-amplifiers (Model 8227), fiber optic links and frequency down-up converters. The receiver powers the GPS antenna and most accessories. Orolia recommends installing a lightning protection device in the antenna line to protect the receiver and connected devices. We offer a Surge Protector, Model 8226, to shunt potentially damaging voltages on the antenna coax to ground.



## GPS Antenna Specifications

### Electrical

**Type:** Active

**Frequency:** 1559 to 1606 MHz

**Out-of-Band Rejection:**

- < 1500 MHz: > 50 dB
- > 1650 MHz: > 50 dB

**Gain:** 40 dB

**Connector:** N type, female

**Recommended Cable:** Low Loss LMR-400 Equivalent

**Maximum Cable Length:** 125 meters (400 ft.) maximum with Orolia equipment and LMR-400 equivalent cable;

250 meters (800 ft.) maximum with Inline Amplifier - Model 8227

**Power:** 2.5 to 16 Volts, 19 milliamps (typical), powered by receiver

### Mechanical

**Size:** 66.5 mm dia. (2.62"); 21.0 mm H (0.83")

**Enclosure:** Radome: ASA plastic;  
Base: Zamak White Metal

**Weight:** 150 g (5.3 oz)

**Compliance:** IP67 and RoHS

**Temperature Range:** -40 °C to +85 °C (-40 °C to +185 °F)

**Mounting:** L-bracket (included) for vent pipe/pole mounting via hose clamps (included), PVC pipe sold separately

### Warranty

1-Year Limited<sup>1</sup>

<sup>1</sup>The warranty period may be dependent on country.

## Flat Roof Mount Specifications (sold separately)

### Mechanical

**Material:** Aluminum Base

**Height:** 6" (15.24 cm)

**Diameter:** 15.625" (39.7 cm)

**Weight:** 17 lbs. (7.7 kg) when filled with ballast (included) for stability

## Ordering Information

### GPS Antenna System

1. GPS Antenna - Model 8230

### Additional Accessories

2. Flat Roof Antenna Mount: Model 8213
3. GPS Antenna Splitter: Model 8224
4. Antenna Surge Suppressor: Model 8226
5. Surge Protector Grounding Kit: Part Number 8226-0002-0600
6. Inline Pre-amplifier: Model 8227
7. Low Loss Antenna Cable: Contact factory
8. Indoor Plenum-rated Antenna Cable, CMP equivalent: Contact factory
9. Connector Interface Weather-Proofing Kit: Part Number 1142-0000-5001
10. PVC Pipe with Hose Clamps: 33.4 mm dia. x 489 mm long (1.32" dia. x 19.25" long): Model 8235
11. Rugged Post Mount: Model ANT-KT



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What's included: L-bracket, 8230 GPS/GNSS Outdoor Antenna, two (2) hose clamps



Model 8230 GPS/GNSS Outdoor Antenna with optional PVC Pipe (Model 8235) and optional Flat Roof Mount (Model 8213)



Model 8230 GPS/GNSS Outdoor Antenna with optional PVC Pipe (Model 8235) and optional Rugged Post Mount (Model ANT-KT)