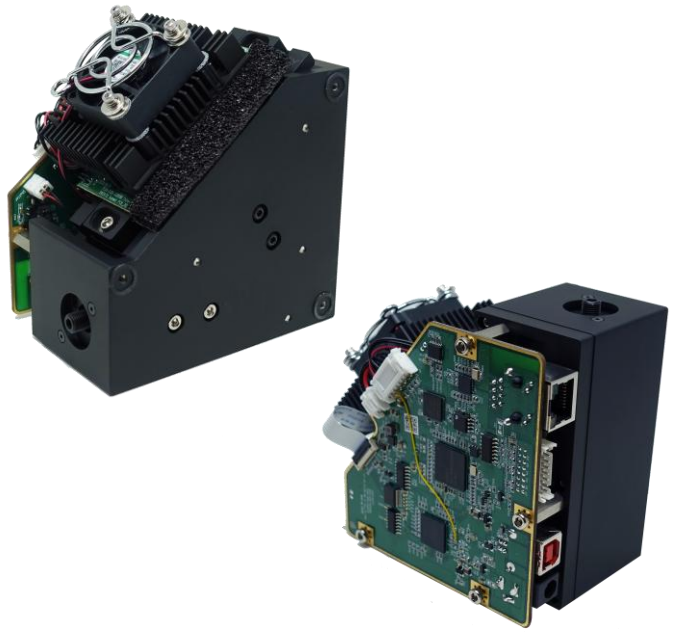
# GoldenBullet™ NIR Spectrometer

A compact, high-performance NIR spectrometer for laboratory, industrial, and OEM integration

The GoldenBullet™ spectrometer delivers high-performance near-infrared spectral analysis using InGaAs linear array sensors in a compact optical platform. Its hybrid transmissive–reflective design enhances optical stability while maintaining flexibility for a wide range of configurations. Designed for reliable NIR measurements, the GoldenBullet supports laboratory, industrial, and OEM applications.



## APPLICATIONS

- NIR spectroscopy and optical metrology
- Film thickness inspection and material analysis
- Food, pharmaceutical, and biochemical analysis
- Fabric and polymer analysis
- Environmental and agricultural sensing
- Process control, quality monitoring, and material identification

## KEY PERFORMANCE

**Wavelength Range:** 900-2200 nm

**Optical Resolution:** slit/grating dependent

**Signal-to-Noise Ratio:** up to 5000

**Dynamic Range:** up to 12000

**Integration Time:** 6 µs – 24 s

**Stray Light:** <0.2 %

**Thermal Stability:** <0.03 nm / °C

**Interface:** USB 2.0, Ethernet, 16-pin I/O

# GoldenBullet™ Specifications

| | | GB6564 | GB6884 | GB6874 | GB6934 |
|---|---|---|---|---|---|
| **Wavelength Range** | | 900 nm – 1700 nm | | | 900 nm – 2200 nm |
| **Sensor Type** | | InGaAs (uncooled) | InGaAs (TEC, 1-stage) | | InGaAs (TEC, 2-stage) |
| **Pixels** | | 256 | 256 | 512 | 256 |
| **SNR** | **LowGain** | 5000 (@25°C) | 5000 (@-5°C) | | 5000 (@-20°C) |
| | **10x** | 3000 (@25°C) | 3000 (@-5°C) | | 3000 (@-20°C) |
| | **20x** | 2200 (@25°C) | 2500 (@-5°C) | | 2500 (@-20°C) |
| | **58x** | 1500 (@25°C) | 1600 (@-5°C) | | 1500 (@-20°C) |
| **Dynamic Range** | **LowGain** | 5900 | 11000 | 6500 | 12000 |
| | **10x** | 4300 | 6500 | 5400 | 6500 |
| | **20x** | 2900 | 5000 | 4600 | 5000 |
| | **58x** | 1300 | 2400 | 3200 | 1800 |
| **Stray Light** | | <0.2% | | | |
| **Thermal Stability** | | <0.03 nm / °C | | | |
| **Dark Noise (avg)** | **LowGain** | 7.5 (<7) | 5.5 (<7) | 5.3 (<10) | 5.2 (<7) |
| | **10x** | 11 (<15) | 8 (<10) | 6.5 (<12) | 6.6 (<9) |
| | **20x** | 15 (<22) | 9 (<13) | 9 (<14) | 8.7(<14) |
| | **58x** | 33 (<50) | 15 (<19) | 15 (<20) | 28(<35) |
| **A/D Converter** | | 16 - bits | | | |
| **Integration Time** | | 6 µs – 24 sec | | | |
| **Operating Temperature** | | 0°C to +50°C | | | |
| **Grating** | | Multiple grating options (model dependent) | | | |
| **Dimensions** | | 100 (L) × 97.5 (W) × 68.9 (H) mm | 109 (L) × 97.5 (W) × 69.8 (H) mm | | |