

## NTM Delta



### Advanced In situ Emissivity Independent Non-contact Temperature Monitor

The NTM Delta is the only high accuracy and repeatability pyrometer which incorporates both real-time same-point emissivity and temperature measurement.

Its design is based on CI Semi's well-known NTM500, with thousands of installations worldwide. The Delta's rapid update rate and small footprint make it ideal for demanding applications such as RTP.

The high sensitivity and broad dynamic range allow low minimum temperatures to be accurately measured. Application- dependent algorithms allow for subtraction of interfering background radiation.

The NTM Delta measures wafer temperatures in RTP, PVD, HDP-CVD, and other processes.

### Features and Benefits

- In situ, non-contact monitoring.
- Real-time, same point temperature and emissivity measurement and compensation.
- High sensitivity with a broad dynamic range to allow minimal temperature measurement.
- Smallest footprint available.
- Rapid update rate (up to 1,000 Hz) for closed loop control.
- Advanced communication protocols including LAN, RS232 and provision for DeviceNet, along with standard analog and digital I/O.
- Background compensation customized to each OEM process environment.
- BIT (Built-In Test).
- Optional remote control unit with temperature display.
- Optional optical interfaces available, including remote optics.

Advanced, user friendly s/w for set-up, calibration and data-logging.

### Key Specifications

#### Temperature range:

Total Range 70°C - 2000°C

Different models available, optimized for specific applications.

#### Accuracy

70°C - 500°C

±0.8°C

500°C - 2000°C	±0.15%T
<b>Repeatability</b>	±0.2°C (typical)
<b>Resolution</b>	0.01°C
<b>Update rate</b>	Up to 400 Hz (with emissivity) Up to 1,000 Hz (without emissivity)
<b>Communication</b>	RS232, Ethernet, provisions for Devicenet
<b>Dimensions</b>	213x100x46 mm (without fiber)