



Suitable for high turbidity monitoring in rivers – treatment monitoring – industrial process monitoring – dredge monitoring

## Datasheet

# Analite NEP-180-OP

## High turbidity backscatter sensor - 180 Option

The Analite NEP-5000 with 180 option is a 180° series of digital turbidity probes designed for monitoring applications where very high turbidity values and high sediment loads are a consideration. This NEP-180-OP probe offers all the features and benefits of its 90° counterpart applied to 180° backscatter technology.

This document gives an overview of the 180 degree option as applied to the NEP-5000 product.

Analite NEP-5000 is a completely customized turbidity probe that can be ordered to the end user's particular needs. It has all the benefits of a custom solution at a very competitive price.

The standard NEP-5000 can be ordered in several custom variations:

- Wiping and non-wiping
- Several outer case material options (Stainless Steel casing is standard)
- Glanded cable or marine connector with mating cable

### The Analite PC configurator allows:

- Fast accurate calibration
- Compensation tools
- Three range settings (low, medium and high)
- Range hopping between three ranges
- Wiper behavior settings
- Selection of many digital and analog outputs

Available outputs included are analog voltage or current loop (4 to 20 mA), RS422/RS485, SDI-12, RS232, USB and Bluetooth.

### Field & process applications

The Analite NEP-5000 wiping probes are specifically designed for applications where bio-fouling build up occurs obscuring the optics. Such environments include, long monitoring deployment or placement in warm bio-active waters.

The Analite integral wiper assembly and optional copper case is designed for operations where severe bio-fouling or sedimentation build up is likely, including:

- Monitoring of streams, rivers, and water storage
- Intermediate and final effluent treatment monitoring
- Hydrological run off studies
- Ground and bore water analysis
- Drinking water filtration efficiency
- Industrial process monitoring
- Sludge and dredge monitoring



### Analite NEP-180-OP range set concept

The Analite NEP-5000 with 180 option is a series of turbidity probes that offers a multiple range concept in settings and selection. Calibrations can be made for three different levels of usage (low, medium and high)\*.

These 3 levels of usage for the 180-degree backscatter sensor are offered as versions to simplify range selection and order placement. The ranges are as follows:

Low-range:	0 to 5,000NTU
Medium-range:	0 to 10,000NTU
High-range:	0 to 30,000NTU

The three range calibrations allow for three types of usage modes and linearity from low range to high-range in the auto-ranging mode\*\*. This is applicable to event-based sediment studies where NTU readings are prone to peaks above a set range.

90-degree versions provide extremely accurate and stable results at very low NTU values. However, the Analite NEP-180-OP sensor can be used in conditions that require linear readings across from low to high NTU Conditions. Whatever the requirement, the NEP-5000 series probe is the most flexible choice. It can be ordered and configured to a multitude of applications.

You can add parameters, modify ranges, and refine calibrations. This can all be done on the PC interface and saved to configuration files. These configuration files can be saved and read back into the sensor to restore the settings.

\*Please refer to Observator NEP-5000 ordering guide document for correct ordering codes.

\*\*One factory calibrated range in the list price.



### Turbidity specifications

Technique	180° backscatter standard									
Ranges	3 preset range groups: <ul style="list-style-type: none"> <li>• Low (example 0-5,000NTU)</li> <li>• Medium (example 0-10,000NTU)</li> <li>• High (example 0-30,000NTU)</li> </ul> Custom ranges available Range hopping capability									
Resolution	<table border="0"> <tr> <th>Range</th> <th>Resolution</th> </tr> <tr> <td>Up to 5,000NTU</td> <td>±1.5NTU</td> </tr> <tr> <td>Up to 10,000NTU</td> <td>±3.0NTU</td> </tr> <tr> <td>Up to 30,000NTU</td> <td>±9.0NTU</td> </tr> </table>	Range	Resolution	Up to 5,000NTU	±1.5NTU	Up to 10,000NTU	±3.0NTU	Up to 30,000NTU	±9.0NTU	
Range	Resolution									
Up to 5,000NTU	±1.5NTU									
Up to 10,000NTU	±3.0NTU									
Up to 30,000NTU	±9.0NTU									
Accuracy	±1% FSO at 25°C all ranges									
Outputs	Digital 3.6V TTL (streaming or polled) RS422/RS485 (streaming or polled) SDI-12 RS232 USB Analog 4-20mA Analog -2.5V to +2.5V (or variations)									
Zero drift	Less than ±0.2NTU									
Calibration	Factory calibrated using non-toxic AEPA polymer solutions									
Power	8-30V DC, 15mA on 40mA reading and 60mA wiping									
Settling time	<1 second after application of power to 99% in single-range mode  <4 second after application of power to 99% in auto-range mode									
Wiping	Wiping is configured through the PC configuration tool. Wipe directions or alternate settings and timeouts will prolong probe life. During a wipe, the output remains within ±1% full scale of the turbidity value just prior to the wipe.									

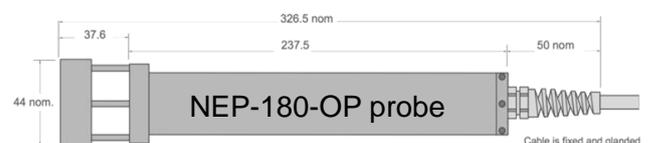
### Mechanics

Weight	NEP-5000 Delrin models 300 grams (probe only*) NEP-5000 metal models 770 grams (probe only*) *100 grams connector plus 70 grams per meter of cable
Construction	Options include: <ul style="list-style-type: none"> <li>• Delrin composite casing is standard</li> <li>• 316 stainless steel</li> <li>• Titanium</li> <li>• Anti-biofouling CW352H 70/30% copper/nickel</li> </ul>
Cable	6 core + shield, 6mm nominal dia. PUR sheath Conductor resistance 45 ohms/km Weight – 70 grams per meter
Cable length	Standard Glanded cable length to be specified at time of order. Per meter price applies.
Depth rating	200m (660ft) non-wiping 100m (300ft) wiping

The standard Analite NEP-5000 series of probes, with its Delrin composite housing may be submerged to a depth of 100 meters. A metal housing is available for applications where a greater depth rating is required. Maximum depth rating is 200 meters (non-wiping with metal case).

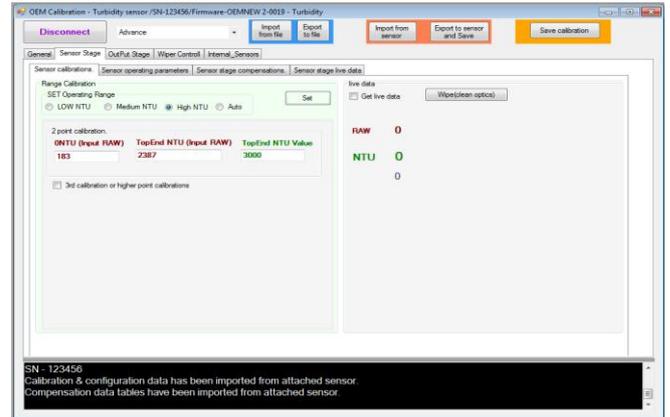
Operating temperature -10°C to 40°C

Storage temperature -20°C to 50°C



## Accessories

NEP-CFG	PC Interface and communication module and PC configuration and calibration software
NEP-WIPER-KIT	Wiper replacement kit comprising of 4 silicon wipers and a hex fastening key
NEP-CBL	Probe cable in meters
NEP-CBL-CON	Subconn connector and cable assembly
Options	Outer case in copper, stainless, or titanium marine connectors
Ordering	To order the NEP-180-OP the following line items must be requested: <ul style="list-style-type: none"> <li>• NEP-5000</li> <li>• NEP-180-OP</li> </ul>



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