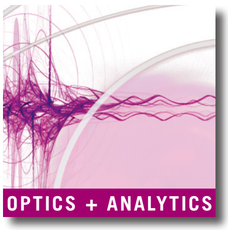
Heraeus



Measuring and Analyzing Coastal Sea Contamination

FiberLight® D_2 Basic Improves Performance and Cost of Pollution Monitoring

Around the world the problem of pollution is an ever rising concern. In areas with rapid population and industrial growth, pollution control becomes a necessity. Examples of pollution are readily available in all parts of the world, but can be especially recognized in enclosed coastal seas. Pollution exacerbates significant environmental problems such as disease transmittance, loss of food sources, and the degradation of the ecosystems of animals. There is no doubt as to the origins of this pollution, so an anthropogenic solution is required.

In Japan the Total Pollutant Load Control System (TPLCS) was introduced based on the Water Pollution Control Law of 1970. This control system targeted Tokyo Bay, Ise Bay, and the Seto Inland Sea, because industrial developments in the surrounding areas discharged polluted water that collected in these bodies of water and became a problem. For any water that was to be discharged into natural waterways, the TPLCS first identified as pollutants and then limited the total nitrogen as well as total phosphorus which may be contained in any effluent stream. Business establishments with daily average effluent of greater than 50 m^3 have to measure pollutant levels either by automated analyzer (e.g.UV meter, TOC meter, TOD meter), or composite sampler, or even by specified measurement (manual analysis).

The need for pollution analysis has fueled an industry that aims to improve the precision of measurements, the field of applications, the speed of analysis, and the cost of equipment. One such company developed its measuring instrument for pollution monitoring utilizing Heraeus' FiberLight® D_2 . While many of their competitors chose to stick with an industry standard of using a xenon lamp, complicated optics and two monochromatic sensors, this company has been able to capitalize on the FiberLight® D_2 Basic Module. They decided for FiberLight® D_2 Basic because of its low noise and the broad and smooth spectrum generated by a combination of a deuterium and a tungsten lamp. Because of the option to control and use the deuterium and tungsten lamp seperately they were able to use a single grating to simplify the optical design, which helped the company to reduce the overall costs. This design has proven successful in a competitive market while providing distinctive features and benefits that allow the end user to realize their own cost and performance advantages.

Features

- Compact light source for mobile spectroscopy
- Complete system consisting of lamp module (deuterium and tungsten lamp in a shine-through arrangement), shutters and a SMA fibre-optic connector
- Low power consumption
- Instant lamp ignition and instant stability
- Cyclic operation
- Separate control and use of deuterium and tungsten lamp

Technical Data

Spectral distribution	200 – 1100 nm
Power consumption	6 Watt
Dimensions (L x W x H)	157 x 55 x 37 mm
Optical fiber connector	SMA 905
Light output (radiant intensity)	≥ 5 × 10-8 W/sr< @240nm
Stability	≤ 1 x 10-30 AU
Drift	≤ 0,25%/h
Life	≥ 1000 h@240 nm (50% intensity loss)

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