

# Control you can measure



## **Accurate, real-time measurements for process monitoring and stream sample analysis.**

**GUIDED WAVE** designs and manufactures complete analytical systems utilizing proven Near Infrared (NIR) and UV/VIS spectroscopic techniques. We deliver a total solution that includes optically matched components and a well-planned calibration approach leading to long-term success and savings. Our state-of-the-art systems are designed for continuous online use, providing real-time data of laboratory quality, while thriving in the most demanding processing plant environments. Our product reliability, stable instrument platform and responsive technical support are why companies from around the world have depended on Guided Wave.

## **Guided Wave partners with you to configure the optimal system for your challenging process measurement needs.**

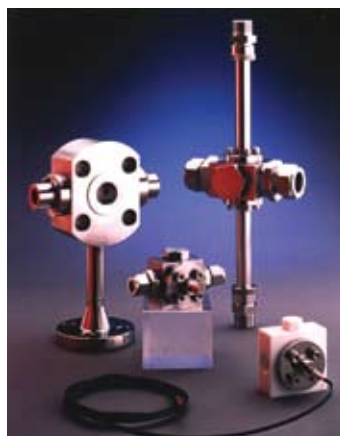
Online monitoring delivers the power you need to drive production. The real-time benefits of Guided Wave technology include a reduction in lag times between batches and the elimination of off-spec material requiring rework. Guided Wave, a company you can count on.



## Powerful. Reliable. Customizable.

Guided Wave analyzer systems consist of rugged, yet highly efficient sample interface designs that may be remotely coupled to the spectrometer or photometer at a safe distance from common areas. Additionally, our analyzers can be fitted with optional equipment making them suitable for deployment in areas classified as hazardous. Even after installation, safety benefits continue. Built-in interpretive diagnostics notify operations instantly of potentially dangerous changes to the chemical composition of your process.

GW systems provide real-time characterization of the stream, allowing for the most efficient and effective processing. The production rates and delivery schedules demanded by your company's resource planning are easily met. Most importantly, because of the access to real-time data, the target quality of your product is never in question. Your customers' expectations are consistently achieved.



We work with you to tailor a solution for your exact requirements, from analyzer to interface, with competency in applications that cover a wide span of industries:

### Chemical Industry

- APHA Color
- Ethylene-Diethylene Glycols
- Isocyanates
- Amines
- Moisture content (ppm or %)

### Refineries

- Octane Number
- Aromatics in Gasoline
- Fuel Identification in Pipelines
- Distillation or Evaporation Points
- Flash, Pour and Cloud Points

### Semiconductor Manufacturing

- Phosphoric Acid
- SC-1, SC-2 Cleaning Solutions
- % HF in Water
- Copper/Sulfuric Acid

### Polymer Synthesis

- Epoxy Number
- OH Number
- Acid Number
- Reaction End Point

### Sterilization

- Vaporized Hydrogen Peroxide
- Ethylene Oxide, gaseous

### Pharmaceutical

- Acetonitrile Cleanup
- Solvent Recovery
- Water in Solvent
- Turbidity

### Consumer Products

- Iodine Value
- Saccharin in Water
- % Alcohol

## The single source for reliable, rugged analyzer hardware

GW products provide continuous analytical monitoring of your process, delivering the data you need, when you need it. Our product line includes optical probes and flow cells, photometers, fiber cables, full-spectrum spectrometers, sampling systems, and data analysis software, all with a two-year warranty. At Guided Wave, all products are tested in system configurations to ensure optimal transmission and full compatibility.

- GW builds all of the analyzer sub-assemblies, ensuring accuracy, safety and reliability.
- GW systems are easy to install and service, and come with assistance, training and after-installation support.
- GW provides application development and feasibility studies.

### Spectrometers

*GW produces the best multiplexed spectrophotometric analyzers in terms of signal-to-noise, providing more robust calibrations and less maintenance.*

- Full-spectrum analyzers cover a wide range of wavelengths, from UV-VIS through the near infrared.
- Process data available to your control system in seconds.
- Exceptional performance with laboratory precision and accuracy in rugged, field-tested instruments.



ClearView® db, an economical option for color, moisture and reaction endpoint measurements.

### Photometers

*GW's economical photometers are designed for straightforward applications where only a few wavelengths are needed. Easy to calibrate and install, they're the simple solution.*

- 1-2 sample points.
- Class 1 Division 1 and ATEX enclosures.
- Small footprint; install without major changes to existing structures.
- Minimal plant utilities/cost of operation; no instrument air, nitrogen or potable water needed.

### Sample Interfaces

*GW robust sampling interfaces are reliable in harsh, challenging conditions. Our probes, flow cells and fiber optics are engineered to optimize total analyzer performance, giving you better data for better decisions.*

- Fiber optic sample interfaces are available for both liquid and gas streams.
- Best light energy transmission efficiency on the market.
- Our specifications typically call for 50% better throughput performance than the competition.
- In-house custom probe and flow cell design for bypass loops and slip streams.
- Patented high-performance optical fiber cabling with rugged Tefzel™ Kevlar™ jacketing or steel monocoil.



Many of our probes can be optimized for the UV, visible or NIR spectral regions or supplied with custom fiber diameters and connectors to match your optical requirements.

## Why use NIR and UV/VIS?

Traditionally, absorption spectroscopy has been used in laboratories to perform precise analysis. In recent years, as electronic circuitry and optical components have become more refined, a more robust portion of the electromagnetic spectrum—UV/VIS/NIR—has emerged for process analytics. No other technology matches the acquisition speed and the range of measurements returned by a fiber optic-based spectrophotometer. A comprehensive set of data that takes hours of laboratory analyses to acquire can be available in about a minute.

Once thought to be too delicate for harsh environments, these workhorse analyzers have been tested for almost three decades. It is typical for a Guided Wave scanning spectrophotometer running 24/7 to last more than 10 years with a >99% uptime. The maintenance requirements are also minimal in comparison to process gas chromatographs and online titrators. The return on investment and the low cost of operation make Guided Wave analyzers a sensible choice.



Ultra high-grade and optically efficient, our durable fiber optic cable uses the best available materials for jacketing, coatings, cladding and core purity.

## The power of online monitoring

In 1983 Guided Wave was recognized as an industry leader when it delivered the first fiber optic-based NIR analyzers. Today GW is the only process NIR vendor that provides a complete optically matched system, yielding the best throughput efficiency and long-term performance that exceeds industry standards.

The team at Guided Wave is accessible and responsive, offering insightful solutions to your application questions, fair prices and knowledgeable service. ISO 9001 certified GW maintains global support and certified technical distributors worldwide. We're with you through the lifetime of the product.



3033 Gold Canal Drive  
Rancho Cordova, CA 95670  
USA

+1 916-638-4944 phone  
+1 916-635-8458 fax  
GWinfo@guided-wave.com  
www.guided-wave.com  
An Advanced Company



Guided Wave Inc. is a subsidiary of Advanced Holdings Ltd (Advanced). Advanced is an ISO9001:2008 certified company which designs, licenses and supplies proprietary process equipment and process technologies for chemical and petrochemical, oil and gas, power generation and micro-electronics industries.