Model 508*plus* UV-Vis Process Analyzer

GUIDED WAVE'S Model 508*plus* Process Analyzer is a multi-channel, fiber optic, UV-Vis spectrometer system designed for use in process environments. Configurable with up to 4 channels, the Model 508*plus* comes in a NEMA 4x enclosure with built-in thermal control to enable the most consistent performance possible while in 24/7 service mode. Up to 16 parameters may be monitored on each channel making it suitable for many applications in chemical and polymer plants, refining and petrochemical, pharmaceuticals and other specialty chemicals, paints and varnishes, adhesives, wastewater management, biotech, etc. It has a built-in computer control unit with touch screen for convenient user interface.

Features

- High sensitivity 2048 Pixel Diode Array Spectrometer
- Built-in compact Xe flash UV-Vis light source
- Rapid data collection
- Built-in Instrument Control Unit (Windows-based PC) with door mounted touch screen
- Analyzer control program developed in LabVIEW™ featuring customizable settings and trending capability
- Modbus Ethernet TCP/IP communications with built-in event setup
- Optional Opto-22 panel and communications for analog and discrete interfacing
- 16 Analog Inputs for temperature and pressure correction of vapor/gas streams (requires Modbus or OPTO 22)
- Compatible with Guided Wave's proven probe and flow cell products
- Fully insulated NEMA 4 or 4X enclosure with built in Internal Thermal Control
- Full spectrum scanning, 200 nm to 850 nm
- Multi-channel design from 1 to 4 channels
- Individual pulsed Xenon source on each channel
- Unscrambler® Calibration Model Ready (with optional Unscrambler Predictor)
- Simple B-Vector and formulaic models
- Built-in Color Analysis
- User definable prediction engine
- File formats - GW ASCII/BINARY and Galactic SPC

Applications

- L*a*b* and other color coordinates
- Solvent recovery purity
- Maleic acid in tetrahydrofuran (THF)
- Trace (ppm level) impurities in wash water; Clean-In-Place for Pharma
- Polynuclear aromatics (PNAs) in middle distillates
- Phenol in cyclohexanone
- Sodium hypochlorite in bleach solutions
- Aromatics in monomers
- Benzene in cyclohexane
- Saybolt or ASTM color of diesel and jet fuels
- Toluene diisocyanate in polyurethane
- UV inhibitors in polymers
- Antioxidants in polymers and plastics
- Color and clarity of varnishes
- Halogens and various Halogenated compounds in vapor streams
- Sorbic acid in water
- Ferrous chloride in acid
- Acetonitrile purity
- Hypochlorous acid

Model 508*plus* UV-Vis Process Analyzer

Software Operating System

The GW508OS Version 3 software package accompanies Guided Wave's Model 508*plus* Process Analyzer. Written in National Instrument's LabVIEW® 2015, it is designed to operate the Model 508*plus* to provide calculated results, The program has a graphical user interface layered over a scheduler that scans the analyzer and provides visualization tools and some automation. This software can handle up to 4 analyzers connected to the instrument controller via USB ports.

Software Features

- Full Scan Control
- Integration time
- Number of pulses/scans
- Dark correction
- Auto spectrum save
- Boxcar integration
- Scan limits and step size
- Spectral units (AU, %T, %R, log(1/R), Emission, Intensity, Kubelka-Munk)

Spectral Preprocessing Options

- 1 and 2 point baseline correction
- Savitzky-Golay smoothing
- Savitzky-Golay differentiation

Property Predictions using Multiple Methods

- Unscrambler® Prediction Engine Version 10.X (OLUPx)
- User Entered Algebraic Formula
- B-vector (dot product)
- Built-in Color Analysis (L*a*b, X,Y,Z , etc.)
- ΔEcmc
- User defined dll (up to 3)

Software Features Continued

File Formats Supported

- Guided Wave ASCII
- Guided Wave Binary
- Galactic SPC
- Property prediction database (ASCII, csv file)

Error/Event Log (ASCII)

Manual Scan Mode w/file Save and Read

- Noise Calculation
- Visual file manipulation options: Scalar Math, Vector Math, Integration, Baseline Correction, Smoothing and Differentiation, etc.
- File overlay option with above mathematical routines and simple regression

Utilities

- Schedule Archive
- Manual Backup
- Event/Error Logging
- Utilization Calculator
- Lamp Pulse Counter
- Multiple Status Screens
- Multi-level Password Protection
- Trend Charting

Communications

- ModBus Ethernet TCP or Serial
- Optional analog and digital I/O w/OPTO 22 panel over Ethernet TCP
  - Full remote control, take analyzer, channels and models on/off line
- 16 analog inputs via ModBus Ethernet or OPTO 22 for temperature, pressure, etc.
  - All values usable in user entered formula predictions
- Watch dog timer
- Printable I/O map

Model 508*plus* UV-Vis Process Analyzer

Reliable, Rugged, and Flexible

By partnering with Guided Wave you gain the advantage of 30+ years experience in online process monitoring and stream sample analysis. Our entire product line is designed and developed to meet the challenges of the most demanding production environments. We favor modular units exemplified by the Model 508*plus*' "snap tight" installation dock. The Plused Xenon source lamp has a lifetime lasting over two years.

Options

- Class I Div 2 Groups C & D, Z-Purge
- Class I Div 1 Groups C & D, X-Purge*
- SNAP I/O analog and discrete communications package by Opto-22 (Modbus Ethernet TCP/IP)
- Unscrambler® Predictor for expanded modeling capabilities
- Compatible with 400, 500 and 600 µm diameter UVSR fiber

* No touch screen for Div I

Specifications

Spectrometer Type	Transmission Grating, High Sensitivity Diode Array
Number of Channels	1-4, Independent, Sequentially Scanned
Wavelength Range	200 nm – 850 nm
Wavelength Accuracy	±0.1 nm
Photometric Noise	< 0.8 mAU @ 0 AU, 550 nm, 1 sec
Stray Light	< 1 % <0.1% @ 220 nm
Bandwidth	< 3 nm
Dynamic Range	2000:1 for a single scan
Minimum Scan Time	5 millisec
Fiber Optic Connections	SMA 905
Compatible Fiber Type	High-OH Deep-UV-Solarization Resistant
Compatible Fiber Diameters	Between 200 µm and ≤ 600 µm; 400 µm standard
Internal Instrument Control Unit (ICU)	Internal w/solid state drive (call factory for specifications)
Operating System	Windows® 7 embedded
Touch Screen Monitor	15" [38 cm] XGA 1024 x 768 color (General Purpose & Class I, Division 2 only)
Software	GW5080Sv3 UV-Vis Operating System
Communications	Modbus TCP over Ethernet or Serial Optional analog and digital I/O w/OPTO 22 panel via Modbus TCP Ethernet
Ethernet	10/100/1000 Mbps
Temperature Range	0 °C - 45°C sun shade required
Humidity	0-100% rain shelter required
Internal Temperature Control	32 °C ±0.5 °C
Light Source / Life	2W pulsed Xenon Lamp / > 2 years
Enclosure	NEMA 4 or NEMA 4x, IP66
Power	110 or 220 Vac 50/60 Hz, 1500 W
Dimensions General Purpose (w x d x h)	30"x 24" x 17.7" [60 cm x 45 cm x 73.5 cm] General Purpose
Hazardous Area Operation	Z-Purge (CI, D2), X-Purge (CI, D1), ATEX (contact factory)
Weight	~ 200 lbs [91 kg]
Warranty	2 year limited warranty
RoHS Compliant	Yes

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

Literature: 1023-17-08-28