APHA/Pt-Co (Hazen) Color Analyzer

Complete Analytical System for Measuring APHA/Platinum-Cobalt Color (ASTM D1209)

This test method describes a procedure for the visual measurement of the color of light colored liquids. It can be referred to by several different names: APHA, Platinum-Cobalt, or Hazen. The measurement was originally developed to detect contamination of water supplies as detected by a slight yellow color. Today it finds use in many industries to measure slight yellowness to determine product quality (either degradation or impurities).

The APHA/Platinum-Cobalt color scale is described in ASTM D1209 "Standard Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)". This ASTM method is an off-line manual laboratory method. The original test design required an observer to compare the color of a product to a known standard, and then judge the "color." The APHA/Platinum-Cobalt color scale ranges from 0 to 500. The lowest value of 0 is referred to as water white. A value of 500 is distinctly yellow.

Using a Guided Wave APHA/Platinum-Cobalt Color Analyzer system to automate this measurement within a process, eliminates the visual judgement of a technician and delivers online real-time process control information to the process operators.

System Configuration

The Guided Wave APHA/Platinum-Cobalt Color Analyzer system is a complete solution. The "ready-to-go" analytical system includes:

- Analyzer - ClearView® db filter photometer technology
- Fiber optic cables
- Sample interface - insertion probe or flow cell
- Control software and specific color application calibration

Accurate, Real-time Reliable Results

The APHA/Platinum-Cobalt Color Analyzer system utilizes a Guided Wave multi-wavelength ClearView db filter photometer analyzer platform. It may be configured for either one (1) or two (2) independent sample monitoring points. The ClearView db analyzer is configured with application-appropriate wavelengths to measure the APHA/Platinum-Cobalt color of the sample. The analyzer employs a dual-beam design – meaning; the system has an continual internal optical reference check that allows it to self-compensate for signal variation due to non-sample conditions. This ultimately provides the system with long term stability. The final product is a total APHA/Platinum-Cobalt Color System that measures the color variation without interference from other factors.

Figure 1 shows an initial calibration chart showing the measured values as compared to laboratory standard values.

Complete APHA/Platinum-Cobalt (Hazen) Color Analyzer System

- Unique dual beam optics - for long term, stable operation
- Up to two (2) independent measurement points - for added analytical flexibility at reduced cost per point
- High efficiency yet rugged fiber optics - analyzer electronics can be located away from a hazardous sample point
- In-door touch screen or Ethernet (Modbus TCP) - easy local or remote analyzer operation and control
- Analytical calculations are all encoded in the software - answers and alarms are clearly reported

The Smart Choice

Guided Wave's APHA/Platinum-Cobalt Color Analyzer system delivers accurate, real-time process measurement results. Its linearity and repeatability, as well as its low maintenance requirements make it a cost effective, smart choice to help optimize production, improve yields, ensure consistent product quality and enhance profitability.

Why Choose Guided Wave

- Over 33 years of online process experience with analyzers installed worldwide.
- A total solution with optically matched components and a well-planned calibration approach leading to your long-term success and overall cost savings.
- Expert technical support and responsive global service for the lifetime of the system.
- For a company you can depend on - for control you can measure!

APHA/Platinum-Cobalt (Hazen) Color Analyzer Enclosure Options

Z-Purge Unit
Class I, Division 2

X-Proof Unit
Class I, Division 1,
IECEx, ATEX

General
Purpose Unit

APHA/Pt-Co (Hazen) Color Analyzer

Complete Analytical System for Measuring APHA color (Platinum-Cobalt ASTM D1209)

Proof of Continuous Accurate APHA/Platinum-Cobalt (Hazen) Color Measurement

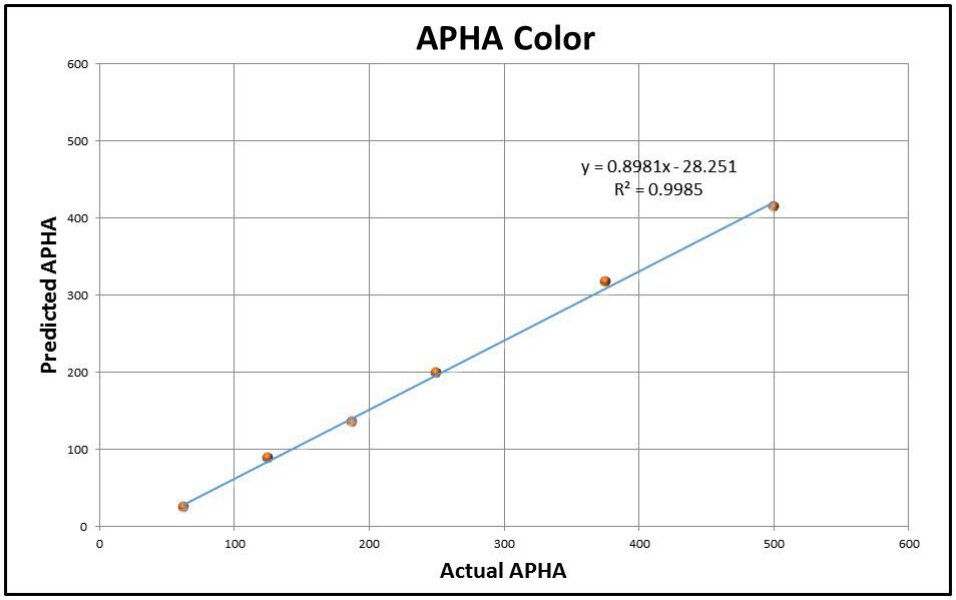

Figure 1

APHA/Platinum-Cobalt (Hazen) Color Analyzer System Specifications

Analyzer Technology	Fiber optic dual-beam ClearView db photometer (see also document #1033)
Fiber Connectors	SMA 905
Light Source	Tungsten-Halogen, >4000 hours typical
Photometric Noise	<50 µAU 450-2100 nm 1 minute rms
Photometric Drift	<500 µAU rms/ °C
Response Time	1 second, minimum. User settable
Measurement Range	0 -500 APHA/Platinum-Cobalt units (Pathlength can be optimized to increase sensitivity)
Measurement Accuracy	Complies with ASTM method D1209
Power	24 VDC, 3 A; 72 watts
Environmental	0 – 45°C, 0 – 90%, sun and rain sheltered

Options for a Custom Solution

Another advantage of the APHA/Platinum-Cobalt color Analyzer system is that is can be customized in many ways. For more information about specifications and analyzer operations request ClearView db document #1033 or call Guided Wave.

No. of Channels	Up to 2 (two) sample channels and optional turbidity monitoring
Outputs (analog)	Up to 6 for a one channel unit Up to 4 per channel for a two channel unit 4 – 20 mA, customer powered
Outputs (discreet)	Up to 6 for a 1 channel unit Up to 4 per channel for a 2 channel unit contact closures
Inputs (analog)	4 (optional) 4 – 20 mA, isolated grounds
Local Display	LCD touch screen, color QVGA
Communications	Ethernet (TCP Modbus) standard
Enclosures	General Purpose NEMA 4 unclassified Z-Purge, NEMA 4x, CI D2 X-Proof, ICEEx, ATEX, CI D1

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

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