



KAM® CHA™ FT

KAM® CHA™ INSERTABLE



KAM® CHA™ COLORIMETER/HAZE ANALYZER



PTB 04 ATEX 1027

In refined products, color variations indicate impurities and/or the presence of trace water or haze. This contamination can be a significant liability as color differentiation can be easily detected by the end user. The KAM® CHA™ Colorimeter/Haze Analyzer is the ideal qualitative solution for monitoring both the color of refined products, including those with added dyes, and the presence of haze in pipelines following the refining process.

Utilizing a unique 5-LED design, the KAM® CHA™ **detects interface color variations within 1%**, and unlike most colorimeters, it can detect the entire range of visible color as defined by CIE 1931 (International Commission on Illumination). Final color measurement can be expressed as haze plus three color (X, Y, Z) or in several industry-standard color scales including, Saybolt, Platinum and Cobalt, and ASTM. Measurement is fully automatic without the need for operator intervention or supervision, and the output signal can be sent to the SCADA, PLC's, or to a Central Control Room for logging or display on chart recorders or monitors.

The KAM® CHA™ **does not require site calibration**, and the incorporated computer automatically adjusts for electronic noise and any LED fluctuations. Because the absorption rates of the different colored fluids vary resulting in different signal strengths, the computer also automatically adjusts the amplification or gain accordingly.

The **simplicity of design** and quality of engineering employed in the Colorimeter/Haze Analyzer mean there are no moving parts. Using long-lasting LED light sources ensures long-term, stable performance with limited maintenance and power requirements. In addition, locating the electronics within an explosion-proof enclosure directly on the atmospheric end of the optical probe creates a complete and compact unit with **maximum installation flexibility**. The KAM® CHA™ easily installs where other colorimeters, weighed down by large electronics/computer units, cannot.

The KAM® CHA™ probe can be installed in an analyzer loop or in the main line, and because it's easily mounted through a full-opening ball valve, you can insert or retract the probe without ever needing to drain the pipe.

KEY KAM® ADVANTAGES

- Only Colorimeter unit on the market with incorporated electronics
- Accuracy to $\pm 1\%$
- 100% interface detection when paired with the KAM® OID™
- No moving parts
- Insertable/retractable and flow through models available

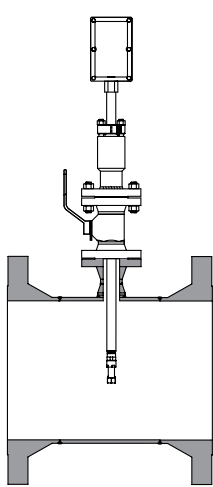
5-LED DESIGN

- Offers greater accuracy over other, 3-LED models
- Long-term performance with minimal power and maintenance requirements
- Automatically adjusts for electronic noise, LED fluctuations, and varying absorption rates
- Measures full spectrum of visible color (CIE 1931)

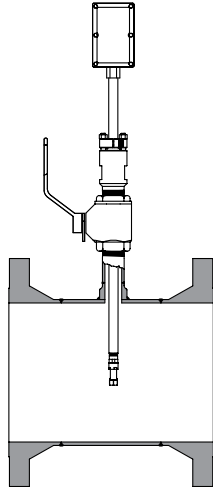
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KAM[®] CHA[™] COLORIMETER/HAZE ANALYZER

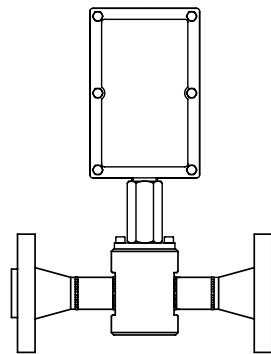
AVAILABLE MODELS and MOUNTING OPTIONS



Insertable CHA[™] on a main pipe, with 2", 3", or 4" flanged seal housing



Insertable CHA[™] on a main pipe, with 2" MNPT seal housing



CHA[™] FT Flow Through with 1" flanges

SPECIFICATIONS

Media:	Refined products
Material:	Wetted parts—316 stainless steel, sapphire
Power:	12–24 VDC 20 Watts max
Communication Interface:	RS-485 reflects values for Haze plus designated color scale (see Color Range)
Fluid temperature:	-40° to 200°F (-40° to 93°C)
Electronics temp.:	-22° to 185°F (-30° to 85°C)
Pressure ratings:	ANSI 150, 300, 600
Accuracy:	Haze ± 5%, Color ± 1%
Repeatability:	Haze ± 1%, Color ± 1%
Reproducibility:	Haze ± 1%, Color ± 1%
Haze Range:	0-100%
Color Range:	Complete range of: CIE 1931 three color (X, Y, Z); ASTM D 1500; ASTM D 156 (Saybolt); ASTM D 1209 (APHA Platinum-Cobalt)
Mounting:	3/4", 1", 1½", and 2" FNPT Flow Through (Metric sizes available) 2" MNPT Seal Housing 2", 3", or 4" Flanged Seal Housing
Sensor Dimensions:	3.5" x 1.25"Ø (90mm x 32mm) Flow through 5.8" x 2.75"Ø (148mm x 70mm)
EX enclosure:	3" x 6" x 3" (76mm x 152mm x 76mm)
Shaft length:	12" to 60" (305mm to 1524mm) Off-the-shelf lengths 12", 24", 36", 48" and 60" (305mm, 610mm, 915mm, 1219mm, 1524mm)
Pipe size:	3/4" to 48" (20mm to 1200mm)
Weight:	from 20 lbs. (9kg)

APPLICATIONS

- Batching
- Interface
- Production
- Transmix/regrade reduction
- Quality control in refined products including dyed and undyed motor and aviation gasoline, jet propulsion fuels, naphthas and kerosine
- Brine detection in LPG transfer from storage caverns



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